

FY2006

McALESTER ARMY
AMMUNITION PLANT
INSTALLATION ACTION PLAN

Printed August 2005

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Cleanup Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, U.S. Army Environmental Center (USAEC), McAlester Army Ammunition Plant, executing agencies, and regulatory agencies an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following agencies contributed to the formulation and completion of this Installation Action Plan at the Installation Action Plan Workshop held April 20 - 21, 2005:

Engineering and Environment, Inc. for US Army Environmental Center

Installation Management Agency-Southwest Region

McAlester Army Ammunition Plant

Oklahoma Department of Environmental Quality

Shaw Engineering & Infrastructure, Inc.

US Army Corps of Engineers, Tulsa District

Weston Solutions, Inc.

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Acronyms & Abbreviations

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AEDB-R	Army Environmental Database - Restoration
APCS	Air Pollution Control System
ARAR	Applicable, Relevant and Appropriate Requirements
BRAC	Base Realignment and Closure
BT	Group 71-BT; identifier of a storage area
CC	Compliance Cleanup
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CMI	Corrective Measure Implementation
CMI(C)	Corrective Measure Implementation - Construction
CMI(O)	Corrective Measure Implementation - Operations
CMIP	Corrective Measure Implementation Plan
CMS	Corrective Measures Study
CTC	Cost-to-Complete
CTT	Closed, Transferring, and Transferred
DAC	Defense Ammunition Center
DCE	Dichloroethylene
DES	Corrective Measures Implementation (Work Plan)
DERP	Defense Environmental Restoration Program
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System (now called AEDB-R)
EEI	Engineering & Environment, Inc.
EM	Environmental Management
EPA	Environmental Protection Agency
ER,A	Environmental Restoration, Army
FS	Feasibility Study
ft	foot
FY	Fiscal Year
IAP	Installation Action Plan
ICM	Interim Corrective Measure
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	thousand
LC	identifies a storage area on the facility
LTM	Long-Term Management
MCAAP	McAlester Army Ammunition Plant
MCL	Maximum Contaminate Level
mg/kg	milligrams/kilograms
mm	millimeters
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
MSSL	Medium-Specific Screening Levels
MW	Monitoring Well
NE	Not Evaluated

Acronyms & Abbreviations

NFA	No Further Action
NPDES	National Pollution Discharge Elimination System
OCC	Oklahoma Corporation Commission
OD	Ordnance
ODEQ	Oklahoma Department of Environmental Quality
OK	Oklahoma
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyls
PCP	Pentachlorophenol
POL	Petroleum, Oil, and Lubricants
ppb	Parts Per Billion
ppm	Parts Per Million
PST	Powder Settling Tank
RA	Remedial Action
RAB	Restoration Advisory Board
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy In Place
RR	Railroad
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
TW	Temporary Well
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WBZ	Water Bearing Zone
ZUNI	type of rocket/missile

Conversions

CERCLA

RCRA

Preliminary Assessment (PA)	= RCRA Facility Assessment (RFA)
Site Investigation (SI)	= Confirmation Sampling (CS)
Remedial Investigation/ Feasibility Study (RI/FS)	= RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)
Remedial Design (RD)	= Corrective Measures Implementation (Work Plan) (DES)
Remedial Action (Construction) (RA(C))	= Corrective Measures Implementation (Construction) (CMI(C))
Remedial Action (Operations) (RA(O))	= Corrective Measures Implementation (Operation) (CMI(O))
Long Term Management (LTM)	= Long Term Management (LTM)
Interim Remedial Action (IRA)	= Interim Corrective Measure (ICM)

Installation Information

INSTALLATION LOCALE: McAlester Army Ammunition Plant (MCAAP) is located in a sparsely populated area of southeast Oklahoma, 9 miles southwest of the City of McAlester (population 16,370), Pittsburg County (population 40,581). The closest major cities are more than a hundred miles away (Tulsa, 113 miles north; Oklahoma City, 120 miles northwest; Dallas, 180 miles southwest). The area has been used for strip mining coal, but is currently used for agricultural purposes. MCAAP occupies 44,965 acres (70 square miles) and is the major employer in the area.

INSTALLATION MISSION: The current mission of MCAAP is to produce and renovate conventional ammunition and ammunition-related components as a Specified Mission Facility. MCAAP receives, stores, ships, and/or demilitarizes and disposes of conventional ammunition and related items. Additionally, MCAAP is the group General Technology Center for bomb loading, assembling, packing, manufacturing, engineering, product assurance and production support. MCAAP is an active facility, which is Government-owned and Government-operated.

MCAAP is also the home for the United States Army Defense Ammunition Center (DAC), which was relocated from the Savanna Army Depot Activity, Savanna, Illinois in 1998.

COMMAND ORGANIZATION:

McAlester Army Ammunition Plant
U.S. Joint Munitions Command
U.S. Army Materiel Command
U.S. Department of the Army

REGULATOR PARTICIPATION:

FEDERAL: U.S. Environmental Protection Agency, Region VI (EPA)

STATE REGULATORY AGENCY: Oklahoma Department of Environmental Quality (ODEQ)

NATIONAL PRIORITIES LIST STATUS:

None of MCAAP sites are on the National Priorities List.

MCAAP is performing corrective actions as required by their Resource Conservation and Recovery Act (RCRA) Part B Permit issued by EPA (1992), and modified December 15, 1998, and is currently under the primacy of the ODEQ (1994).

RAB/TRC/TAPP STATUS:

MCAAP does not have a Restoration Advisory Board (RAB) or a Technical Review Committee (TRC).

Installation Information

PROGRAM SUMMARIES:

IRP

Contaminants of Concern: TPH, Metals, PCBs, Dioxins, POLs, TCE
Media of Concern: Soil, Groundwater, Surface Water, Sediment
Estimated Date for RIP/RC: 2009
Funding to Date: (FY76-FY05): \$13,950,353
CTC: \$4,647,000

MMRP

Contaminants of Concern: UXO
Media of Concern: Soil
Estimated date for RIP/RC: 2014
Funding to Date: (FY03-FY05) \$326,000
CTC: \$12,095,000

BRAC

There are no BRAC sites at McAlester

CC

There are no CC sites at McAlester

Cleanup Program Summary

HISTORIC ACTIVITY: McAlester Naval Ammunition Depot began with a War Department announcement on June 10, 1942, that a \$35 million plant would be built to provide additional production facilities during World War II. Work began on the construction of the McAlester Naval Ammunition Depot at McAlester, Oklahoma, in August 1942. Construction of the depot was a concerted effort, and at the height of activity, 15,000 workers were employed. Construction proceeded rapidly, and on September 24, 1943, the first munitions were produced. During World War II, the facility produced 325,000 tons of various types of munitions including 16-inch gun ammunition, mines, rockets, and depth charges.

On October 1, 1977, the Deputy Secretary of Defense transferred operation from the Department of Navy to the Department of Army, under the provisions of the Department of Defense Directive 5160.65 and established the MCAAP as the single manager for the manufacture of conventional ammunition. MCAAP was assigned to the United States Army Armament Materiel Readiness Command. The primary mission of MCAAP did not change after transfer of operations to the Army.

EPA Region 6, in conjunction with ODEQ, issued a RCRA part B permit in September 1992. The permit, that was modified December 15, 1998, requires the corrective action program at MCAAP. EPA Region 6 was the lead regulatory agency for RCRA remediation until ODEQ obtained corrective action authority in December 1994.

CURRENT ACTIVITY: The primary mission at MCAAP is to receive, renovate, maintain, store and issue ammunition, explosives and expendable ordnance items.

PROGRAM PROGRESS SUMMARIES:

IRP: Completed RI/FS field activities at MCAAP-046 and 048. Obtained closure for MCAAP-047. Proposed Monitored Natural Attenuation (MNA) as a remediation strategy at MCAAP-046 and 048. Five year reviews are underway for sites MCAAP-002, MCAAP-032, MCAAP-033 and MCAAP-043,

MMRP: Completed PA in 2004. Additional SI will be completed. UXO and ex situ soil treatment is anticipated at all five of the MMRP sites.

BRAC: There are no BRAC sites at McAlester.

CC: There are no CC sites at McAlester.

MCALESTER AAP

INSTALLATION RESTORATION PROGRAM

IRP Summary

STATUS: None of MCAAP sites are on the National Priorities List.

MCAAP is performing corrective actions as required by their RCRA Part B Permit issued by EPA (1992), and modified December 15, 1998, and is currently under the primacy of the ODEQ (1994).

AEDB-R SITES/SITES RC/SITES RC WITH LTM: 48/42/4

AEDB-R SITE TYPES:

1 Contaminated Sediment	3 Contaminated Buildings	3 Storage Area
2 Surface Disposal Areas	1 Drainage Ditch	1 Disposal Pit/Dry Well
1 Industrial Discharge	10 Landfills	1 Oil Water Separator
2 Spill Site Areas	3 Waste Treatment Plants	2 Burn Areas
1 Miscellaneous Tanks	14 Surface Impoundments/Lagoons	
3 Explosive Ordnance Disposal Areas		

CONTAMINANTS OF CONCERN: TPH, Metals, PCBs, Dioxins, POLs, TCE

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediments

COMPLETED REM/IRA/RA:

MCAAP-018, 026, 032, 033, 037, 043, 045, 046, 047, 048

TOTAL ERA FUNDING:

PRIOR YEAR (FY89-FY04)	\$ 13,256,912
CURRENT (FY05):	\$ 693,441
FUTURE:	\$ 4,647,000

DURATION OF IRP:

Year of IRP Inception:	1991
Year of RA Completion:	2008
Year of IRP Completion:	Indefinite

IRP Contamination Assessment

In 1987, the EPA Region 6 performed a RCRA Facility Assessment (RFA) and identified eight Solid Waste Management Units (SWMUs). In 1992, the United States Army Environmental Hygiene Agency (USAEHA) performed an additional assessment and identified 42 potential SWMUs at MCAAP. Consultations among the parties on March 10-11, 1992, determined that the USAEHA report would be used as the baseline. All 42 of these sites were designated as Defense Environmental Restoration Program (DERP) eligible sites, and were entered into the Defense Site Environmental Tracking System (DSERTS). ODEQ and EPA Region 6 accepted the recommendation of no further action (NFA) for 33 of the sites, leaving nine of these sites requiring further investigation.

On January 25, 1993, MCAAP issued a memorandum to EPA Region 6 providing notification of a newly identified SWMU, the Minol Building (MCAAP-043) and required further investigation for PCBs, bringing the total to ten sites requiring further investigation. Brown Lake was identified to be sampled in the USAEHA report and, subsequently, became a DSERTS site (MCAAP-044).

MCAAP requested, and USAEC conducted, the RCRA Facility Investigation (RFI) for the nine SWMUs identified in the permit, plus the newly identified SWMU (MCAAP-043). The RFI was submitted in December 1994 and recommended NFA at five of the ten sites. ODEQ accepted NFA for SWMUs 1, 2, 5, 12 and 19 on December 15, 1998, by permit modification.

The remaining 5 sites required additional work. A removal action was performed at the Minol Building in 1994 - 1995. EPA accepted the cleanup of the Minol Building (MCAAP-043) by letter on October 4, 2000. Corrective measures studies were performed at the remaining 4 sites. Two sites, the Deactivation Furnace/Lagoon (MCAAP-018) and the Burn Area 2 (MCAAP-026) were remediated for lead contamination in 1998 and 2000, respectively. These remedies were also accepted on December 15, 1998, by permit modification. The remaining sites, Building 209 Pallet Dipping Operation (MCAAP-032) and Pallet Dip Operation (MCAAP-033), based on risk assessments, were determined to meet ODEQ remediation goals, thereby qualifying for NFA. Final acceptance is being requested through the application for permit renewal, submitted in February 2002.

MCAAP investigated another site, the Roundhouse Complex, to determine if it required designation as a SWMU. The site did not meet the requirements to be designated as a SWMU, but was included in DSERTS (MCAAP-045) and has been remediated.

Over time, several historical sites have come to the attention of MCAAP. In 1999, two possible sites were identified and investigated by the U. S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), the Former Scrap Metal Baler Area and the Mortar Range Impact Area. The Former Scrap Metal Baler Area has been included in AEDB-R (MCAAP-046). The Mortar Range Impact Area is being addressed under the MMRP. In 2001, two new ER,A eligible AEDB-R sites, the PCB Contamination Detention Area (MCAAP-047) and Miscellaneous Tanks (MCAAP-048), were identified.

MCAAP now has a total of 48 sites in AEDB-R, not including the MMRP sites. Currently six sites are receiving ER,A funding. These are MCAAP-002, 032, 033, 043, 046, and 048. Two of the sites, MCAAP-046 and 048, are currently under investigation. At these sites, the main

IRP Contamination Assessment

contaminants of concern are metals, POLs, dioxins, PCBs, SVOCs, and solvents in soil and TCE in the groundwater.

CLEANUP EXIT STRATEGY:

MNA has been proposed as a remediation strategy at MCAAP-046 and 048. MCAAP plans to demonstrate that the sites are natural attenuating and will not pose a threat to Brown Lake, the local drinking water source. Five-year reviews will continue at sites where contamination was left in place to ensure remedial actions are still protective of human health and the environment.

PREVIOUS STUDIES:

1979

- Installation Environmental Impact Assessment, US Army Armament Materiel Readiness Command, March-79.
- McAlester Army Ammunition Plant Water Quality Management Study, US Army Corps of Engineers & Horacek, Smith, Painter and Spitz, Inc., November-79.

1987

- Environmental Studies and Disposal Recommendations (Final), Enviromed Laboratories, Inc., April-87.
- RCRA Facility Assessment Report, McAlester Army Ammunition Plant, Environmental Protection Agency, August-87.

1988

- Update of the Initial Installation Assessment of McAlester Army Ammunition Plant, OK, U.S. Army Toxic and Hazardous Materials Agency, Aberdeen, MD, Environmental Science and Engineering, Inc, June-88.

1990

- Groundwater Assessment, US Army Corps of Engineers, January-90.
- Groundwater Quality Consultation No. 38-26-0374-91, US Army Environmental Hygiene Agency, December-90.

1992

- Wastewater Management Study No. 32-24-H094-92, Preliminary Toxicity Testing and Evaluation, US Army Environmental Hygiene Agency, February-92.
- Groundwater Quality Consultation No. 38-26-K135-92, Evaluation of Solid Waste Management Units, US Army Environmental Hygiene Agency, March-92.

1993

- Final Project Work Plan - RCRA Facility Investigation for MCAAP Sites, Metcalf & Eddy, Inc., June-93.

Previous Studies continued on next page

IRP Contamination Assessment

1994

- RCRA Facility Investigation (RFI) Report for Various Solid Waste Management Units, Metcalf & Eddy, Inc., January-94.
- Submittal of Summary Report, Removal and Disposal of the PCB Contaminated Soil, South of Building 177, US Army Corps of Engineers & Dow Environmental, April-94.
- Draft Work Plan - Minol Building, US Army Corps of Engineers & AWD Technologies, Inc., September-94.
- RCRA Facility Investigation and Risk Assessment Report - Supplemental Phase II - SWMU 32 and 33, Metcalf & Eddy, Inc., November-94.
- Final Work Plan, Removal and Disposal of PCB Contaminated Material and Soil - Minol Building, US Army Corps of Engineers & AWD Technologies, Inc., December-94.
- RCRA Facility Investigation and Risk Assessment (Final), U.S. Army Environmental Center, Aberdeen, MD, Metcalf and Eddy, Inc., December-94.

1995

- Final Corrective Measure Study Work Plan - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & R.F. Weston, January-95.
- Final Work Plan – Roundhouse, US Army Corps of Engineers & Woodward-Clyde, April-95.
- Final Summary Report, Removal and Disposal of PCB Contaminated Material and Soil, Minol Building, US Army Corps of Engineers & Dow Environmental (formerly AWD), July-95.
- Draft Summary Report - Soil Sampling South of Bldg 177 (Minol Building), US Army Corps of Engineers & Dow Environmental (formerly AWD), September-95.
- Summary Report, Soil Sampling South of Building 177 (Draft, accepted as Final), US Army Corps of Engineers & Dow Environmental (formerly AWD), September-95.
- Administrative Record for Corrective Measure Study - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & R.F. Weston, 1995.
- Administrative Record for Corrective Measure Study - Burn Area 2 - SWMU 26, US Army Corps of Engineers & R.F. Weston, 1995.
- Administrative Record for Corrective Measure Study - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & R.F. Weston, 1995.
- Administrative Record for Corrective Measure Study - Burn Area 2 - SWMU 26, US Army Corps of Engineers & R.F. Weston, 1995.

1996

- Final Corrective Measure Study Work Plan - Burn Area 2 SWMU 26, US Army Corps of Engineers & R.F. Weston, January-96.
- Final Work Plan, Removal and Disposal of PCB Contaminated Material and Soil, Minol Building, US Army Corps of Engineers & Dow Environmental (formerly AWD), February-96.
- Field Data Verification Report - Burn Area 2 - SWMU 26, US Army Corps of Engineers & R.F. Weston, March-96.
- Draft Summary Report - Removal and Disposal of PCB Contaminated Soil South of Bldg 177 (Minol Building), US Army Corps of Engineers & Dow Environmental (formerly AWD), April-96.

Previous Studies continued on next page

IRP Contamination Assessment

- Final Field Technical Report - Site Investigation of Roundhouse Area, US Army Corps of Engineers & Woodward-Clyde, October-96.

1997

- Final Corrective Measure Study Report - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & R.F. Weston, June-97.
- Final Corrective Measure Study Report - Burn Area 2 - SWMU 26, US Army Corps of Engineers & R.F. Weston, June-97.

1998

- Corrective Measures Implementation Plan for SWMU #18, Soil Remediation and Lagoon Closure, US Army Corps of Engineers & R.F. Weston, March-98.
- Field Data Verification Report - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & R.F. Weston, March-98.
- Final Corrective Measure Implementation Plan for SWMU 18 Soil Remediation and Lagoon Closure, US Army Corps of Engineers & R.F. Weston, March-98.
- Final Project Work Plan - Deactivation Furnace and Lagoon - SWMU 18 and 34, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, October-98.
- Project Work Plan, SWMU #18 Soil Remediation and Lagoon Closure, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, October-98.

1999

- Final Corrective Measure Implementation Plan - Burn Area 2 - SWMU 26, US Army Corps of Engineers & R.F. Weston, January-99.
- Corrective Measure Completion Report - Minol Building US Army Corps of Engineers & Radian International, March-99.
- Final Sampling and Analysis Plan for Corrective Measure Treatability Study - Burn Area 2 - SWMU 26, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, June-99.
- Final Corrective Measure Study Work Plan - Former Pallet Dipping Area - Bldg 209 - SWMU 32, US Army Corps of Engineers & R.F. Weston, June-99.
- Final Corrective Measure Study Work Plan - Former Pallet Dipping Area - Bldg 471 - SWMU 33, US Army Corps of Engineers & R.F. Weston, June-99.
- Final Corrective Action Closure Report, SWMU #18 Soil Remediation and Lagoon Closure, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, July-99.
- Final Corrective Measures Completion Report, Minol Building and Drainage Ditch South of Building 177, US Army Corps of Engineers & Radian International (formerly Dow Environmental), July-99.
- Report for Removal and Disposal of Total Petroleum Hydrocarbons Contaminated Materials and Soil, Roundhouse Area, US Army Corps of Engineers & Woodward-Clyde, September-99.
- Final Project Work Plan - Soil Remediation for Burn Area 2, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, October-99.

Previous Studies continued on next page

IRP Contamination Assessment

- Hazardous and Medical Waste Study No. 37-EF-4333-00 Relative Risk Site Evaluation, December-99.

2000

- Final Corrective Measure Completion Report for SWMU 18 Soil Remediation and Lagoon Closure, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, February-00.
- Site Validation Report - Former Pallet Dipping Area - Bldg 209 - SWMU 32, US Army Corps of Engineers & R.F. Weston, April-00.
- Site Validation Report - Former Pallet Dipping Area - Bldg 471 - SWMU 33, US Army Corps of Engineers & R.F. Weston, April-00.
- Final Corrective Action Closure Report, SWMU #26 Burn Area 2 Soil Remediation, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, May-00.
- Final Corrective Action Closure Report - Burn Area 2 - SWMU 26, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, June-00.
- Final Corrective Measure Study Report - Former Pallet Dipping Area - Bldg 209 - SWMU 32, US Army Corps of Engineers & R.F. Weston, November-00.
- Final Corrective Measure Study Report - Former Pallet Dipping Area - Bldg 471 - SWMU 33, US Army Corps of Engineers & R.F. Weston, November-00.

2001

- Hazardous and Medical Waste Study No. 37-EF-4333-01, Relative Risk Site Evaluation, January-01.
- UST/PST Ground Penetrating Radar Report - Powder Settling Tank and Underground Storage Tanks - MCAAP 46 and MCAAP 48, US Army Corps of Engineers & GeoModel, February-01.
- Project Execution Plan Scrap Metal Baler and PCB Contamination, US Army Corps of Engineers & IT Corporation/Shaw Environmental, July-01.
- Final Corrective Measure Study Work Plan Scrap Metal Baler Area and Remedial Action Work Plan, US Army Corps of Engineers & IT Corporation/Shaw Environmental, November-01.
- Final Corrective Measure Completion Report - Burn Area 2 Soil Remediation (SWMU 26), US Army Corps of Engineers & IT Corporation/OHM Remediation Services, December-01.
- Work Plan and Site Safety Health Plan for Removal of Underground Storage Tanks and Powder Storage Tanks, US Army Corps of Engineers & World Environmental, 2001.
- Work Plan and Site Safety Health Plan for Removal of Underground Storage Tanks and Powder Storage Tanks, US Army Corps of Engineers & World Environmental, 2001.

2002

- Magnetic Investigations - Powder Settling Tank and Underground Storage Tanks - MCAAP 46 and MCAAP 48, US Army Corps of Engineers & Environmental Geophysics Associates, January-02.
- Final Work Plan - Corrective Measure Study for Powder Settling Tanks and Underground Storage Tanks, US Army Corps of Engineers & R.F. Weston, March-02.

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IRP Contamination Assessment

- Interim Investigation Reports (Powder Settling Tanks and Underground Storage Tanks - MCAAP 48), US Army Corps of Engineers & R.F. Weston, July-02.
- Draft Final Addendum for Corrective Measure Study Work Plan - Powder Settling Tanks and Underground Storage Tanks - MCAAP 48, US Army Corps of Engineers & R.F. Weston, November-02.
- Final Addendum to Work Plan Removal of Underground Storage Tanks and Powder Settling Tanks - MCAAP 48, US Army Corps of Engineers & IT Corporation/Shaw Environmental, December-02.
- Final Work Plan - Corrective Measure Study - Powder Settling Tanks and Underground Storage Tanks - MCAAP 48, US Army Corps of Engineers & R.F. Weston, December-02.

2003

- Final Addendum 1 to Corrective Measure Study Work Plan Scrap Metal Baler Area and Remedial Action Work Plan, US Army Corps of Engineers & IT Corporation/Shaw Environmental, January-03.
- Work Plan Addendum 2 for Corrective Measure Study Work Plan - Powder Settling Tanks and Underground Storage Tanks - MCAAP 48, US Army Corps of Engineers & R.F. Weston, January-03.
- Final Addendum 2 to CMS Work Plan Scrap Metal Baler Area and Remedial Action Work Plan, US Army Corps of Engineers & IT Corporation/Shaw Environmental, July-03.
- Final Addendum 3 to Corrective Measure Study Work Plan Scrap Metal Baler Area and Remedial Action Work Plan, US Army Corps of Engineers & IT Corporation/Shaw Environmental, September-03.
- Field Activities Report - Investigation and Plume Delineation of Upper Groundwater Bearing Zone @ PST 103, 109A, 161, and 163., US Army Corps of Engineers & R.F. Weston, November-03.
- Draft Final Powder Settling Tank Removal Report, US Army Corps of Engineers & IT Corporation/Shaw Environmental, December-03.

2004

- Draft Final Field Activities Report - Investigation and Plume Delineation of Upper Groundwater Bearing Zone at Former Scrap Metal Baler Site, US Army Corps of Engineers, March-04.
- Draft RCRA Facility Investigation - SWMU 48 Powder Settling Tanks, US Army Corps of Engineers & R.F. Weston, June-04.
- Draft Corrective Measure Study for SWMU 48 - PST 103, 109A, 161 and 163, US Army Corps of Engineers & IT Corporation/Shaw Environmental, July-04.
- Final PCB Contamination Detention Area Remedial Action Completion Report, US Army Corps of Engineers & IT Corporation/Shaw Environmental, July-04.
- Work Plan Addendum 3 for Corrective Measure Study Work Plan - Powder Settling Tanks and Underground Storage Tanks - MCAAP 48, US Army Corps of Engineers & R.F. Weston, July-04.

Previous Studies continued on next page

IRP Contamination Assessment

- Draft RCRA Facility Investigation - Underground Storage Tanks - MCAAP 48, US Army Corps of Engineers & R.F. Weston, July-04.

2005

- Final Soil RCRA Facility Investigation Report, Former Scrap Metal Baler Area (DSERTS No. 46), US Army Corps of Engineers & Shaw Environmental, May-05.
- Photo Log - SWMU 18, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, May-05.
- Photo Log - SWMU 18, US Army Corps of Engineers & IT Corporation/OHM Remediation Services, July-05.

MCALESTER AAP

INSTALLATION RESTORATION

PROGRAM

SITE DESCRIPTIONS

FORMER SCRAP METAL BALER AREA PAGE 1 OF 3**SITE DESCRIPTION**

The Baler site is located in the Defense Reutilization and Marketing Office (DRMO) yard. At this site, a Resource Recovery Recycling program baler was used to compact metal cans and other metal objects. The cans crushed here are suspected of having contained paints, oils, solvents, and other liquids in varying amounts. Over the years of operation, 1950s to 1980s, especially in the 1950s and 1960s, it is believed that some of the waste materials leached into the soil. During rainy periods, an oily layer has been noted floating on puddles in the vicinity of the baler. The baler and the underlying sump have been removed. The site presently consists of a gravel-covered area, ~3 acres in size, with an active rail line running through it.

Sampling by USACHPPM occurred in December 1999. PCBs, metals, and SVOCs above EPA Region 6 residential medium-specific screening levels (MSSLs) were detected in soil.

The RFI (started in 2002) found petroleum hydrocarbons in the soils and chlorinated organics (above the MCL) in the groundwater. Removal of petroleum hydrocarbon contaminated soils was completed in 2004. During the removal, multiple 105mm rounds were encountered. In 2003, a plume delineation study was performed. Chlorinated organics were only identified in the upper water-bearing zone (WBZ). Sentry wells installed in 2004 indicated the plume had not been fully delineated to the south and southeast. New wells were installed between the sentry wells and Brown Lake. Analytical results from these wells indicate that the plume has not been delineated.

Hydrogeologic characterization of the upper WBZ has indicated permeability may be near 10^{-3} cm/sec.

STATUS

RRSE: Medium

CONTAMINANTS: POL, PCBs, Dioxins, Solvents, Metals, TCE

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199912	200009
RFI/CMS.....	200106	200710
DES.....	200710	200802
IRA	200305	200503
CMI(C)	200802	200810
CMI(O)	200810	202609

RIP: 200810

RC: 202610

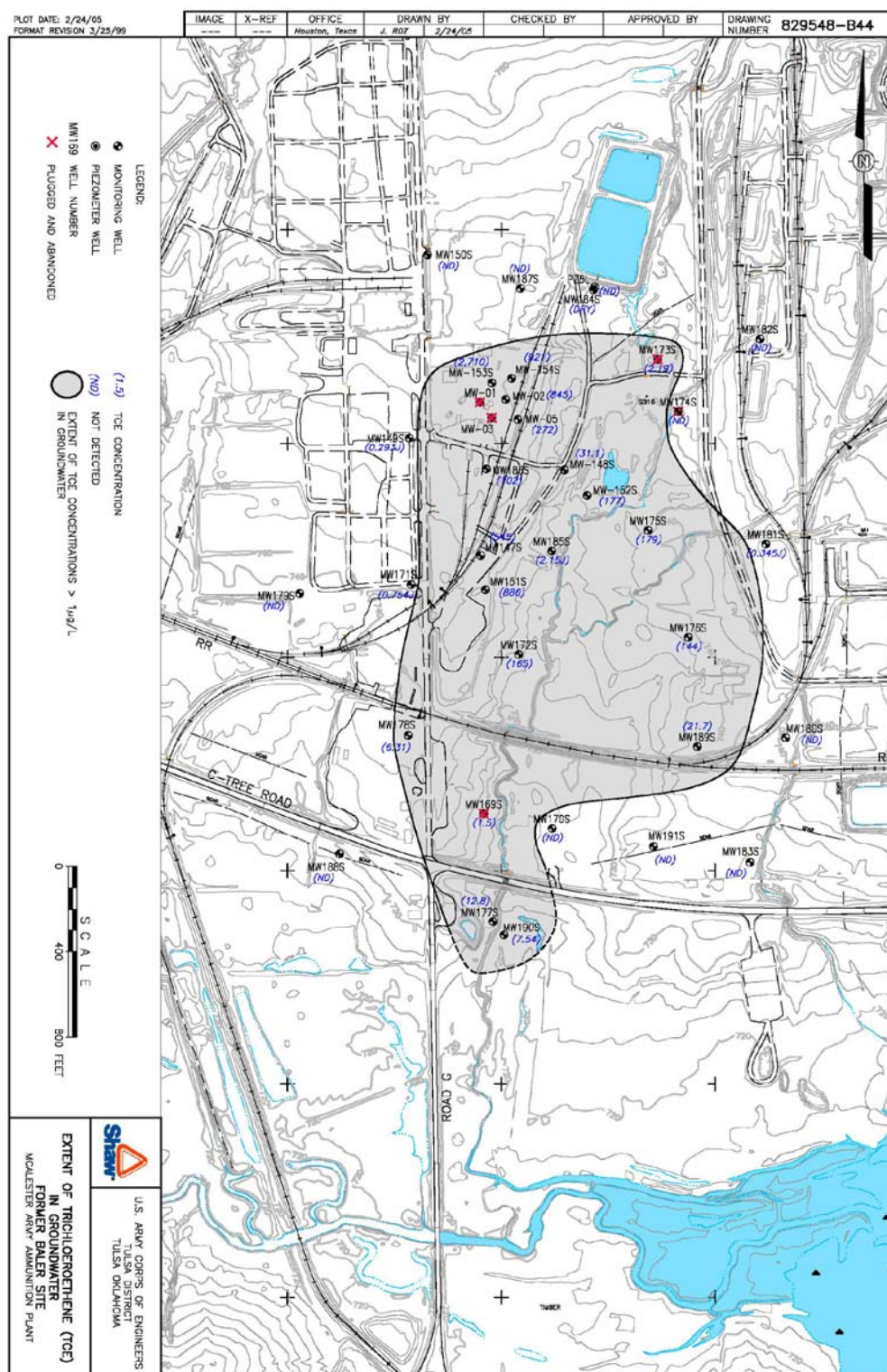
FORMER SCRAP METAL BALER AREA PAGE 2 OF 3

CLEANUP STRATEGY

Perform human health and screening level ecological risk assessments to determine impacts of TCE at the marsh interface and any residual arsenic concerns in soil. Perform quarterly sampling for VOCs and geochemical properties.

The anticipated remedial action for groundwater is MNA. Because the southeastern edge of the plume has not been delineated and may be moving, enhanced MNA (up to 25 injection wells) between the known edge of the plume and Brown Lake is also a possible remedial action. It is assumed injection would occur over a six-month period. MNA sampling will be conducted quarterly the first year (FY05-FY06) and annually in the out years. VOC sampling will be semi-annual after 8 quarters and annual after 10 years. Thirty wells will be sampled the first two years (FY05-FY07) and twenty wells thereafter. MNA sampling will begin during the RFI phase to evaluate its applicability and effectiveness then continue formally under RA(O) in the out years. The exit strategy is that within 10 years the data will be compiled and re-evaluated. A recommendation will be submitted to ODEQ to reduce or eliminate sampling.

Well abandonment will occur as wells are no longer needed to support the monitoring (funding programmed in the out years).

FORMER SCRAP METAL BALER AREA PAGE 3 OF 3

MISCELLANEOUS TANKS PAGE 1 OF 6**SITE DESCRIPTION**

This SWMU originally consisted of 19 suspected underground storage tank (UST) locations and 10 powder settling tank (PST) locations. The suspected UST locations were identified from files obtained during development of the Environmental Baseline Study for Privatization of Utilities in FY00 and subsequent retiree interviews. Documents suggested USTs had been filled with sand and fuel was left in place. USACHPPM evaluated the sites and determined that at least one UST was still in place. Through a combined magnetometer survey and test pit excavation of the 19 sites, 4 sites (50PC 101, 105B, 136B and near Roads CD&7) were found to contain a total of 11 USTs. Contaminants of concern included petroleum hydrocarbons. During the interim removal action (IRA) for the USTs, the 11 USTs were removed during the summer 2002. Petroleum hydrocarbons and low levels of TCE were detected in some USTs, but no TCE was found in soil. Where soils contaminated with

petroleum hydrocarbons were found, the soils were removed until confirmation samples verified levels were below Oklahoma Corporation Commission (OCC) requirements. Closure forms were submitted to OCC in November 2002 and accepted without comment. At the request of ODEQ, the groundwater at four UST sites was investigated for possible release from the tanks in 2003. Selenium and phthalates were identified above MCLs, but were not attributed to the USTs, and total petroleum hydrocarbon concentrations were less than OCC action levels.

USACHPPM identified the PST sites in 2000. Water used to clean the walls and floors of the production facilities settled in the PSTs and discharged through an overflow pipe. During the removal in 2003 it was determined that 3 sites (133, 161, 163) emptied into the sanitary sewer and 7 sites (103, 109, 109a, 110, 111, 126, 130) discharged into drainage pathways. In 2002, the RFI investigation found concentrations of chlorinated organics (TCE, etc.) above the MCL in the groundwater at four sites (103, 109A, 161, 163). Several metals were identified above the EPA drinking water screening levels. In 2003, the horizontal extents of four chlorinated organics plumes were delineated including the largest plume (161) located adjacent to the backwaters of Brown Lake, a sensitive water supply. Chlorinated organics were not detected in the second WBZ. The PSTs were removed along with tank pit soil that contained chemical concentrations exceeding 10 times the EPA MSSSLs (10×10^{-5}) risk.

In 2004, additional TCE contaminated material (soil) at PST Site 103 was removed. The hydrogeologic formation characteristics of the upper WBZ at PST sites (103, 109A, 161, 163) were evaluated and a background soil evaluation for metals was performed. The Final UST RFI and Final PST RFI reports were submitted in March 2005.

STATUS

RRSE: Medium

CONTAMINANTS: POL, Metals, PCBs, TCE

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	200010	200103
RFI/CMS.....	200106	200612
IRA.....	200106	200503
CMI(C).....	200701	200710
CMI(O)	200710	202009

RIP: 200710

RC: 202009

MISCELLANEOUS TANKS PAGE 2 OF 6

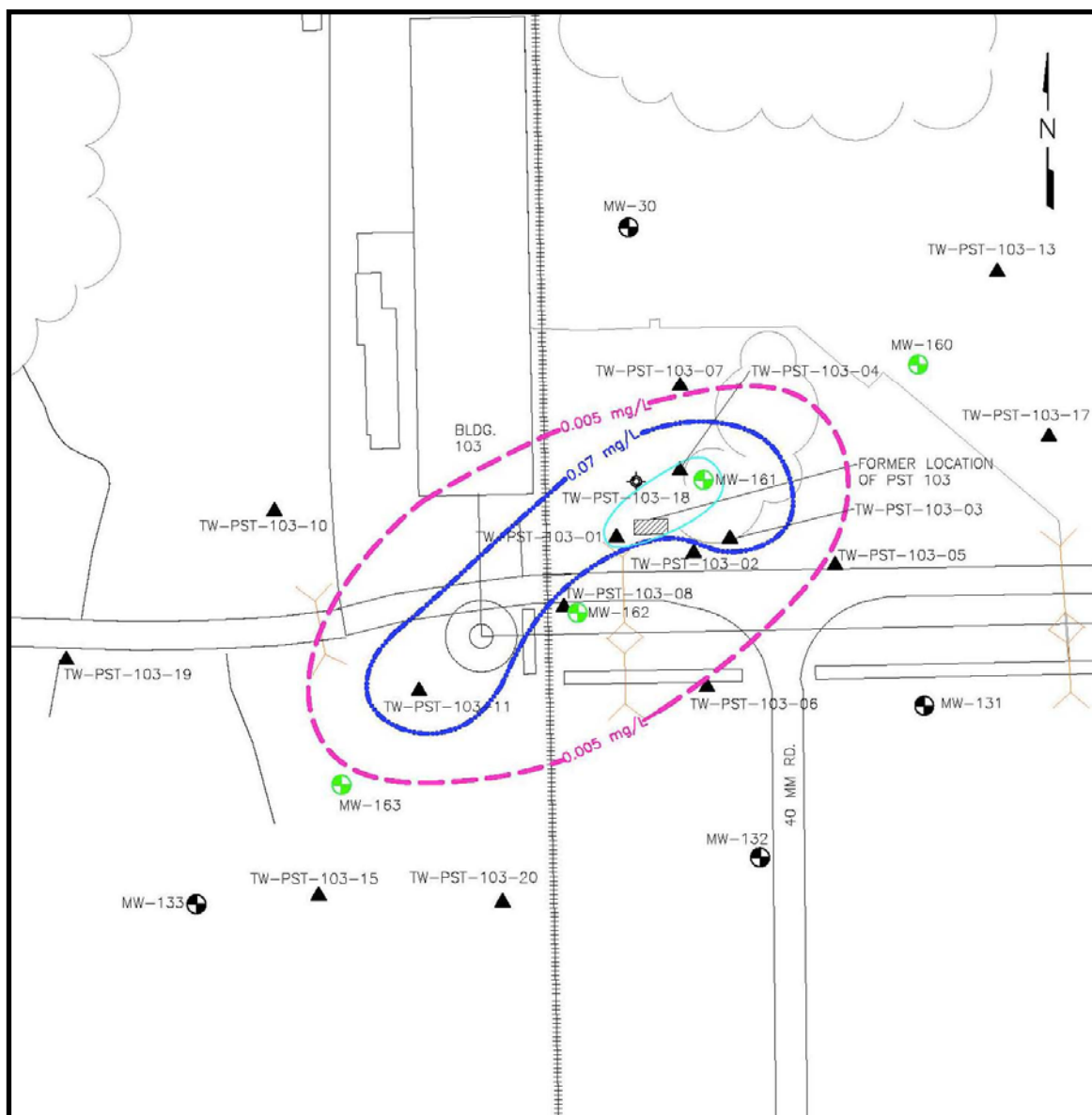
CLEANUP STRATEGY

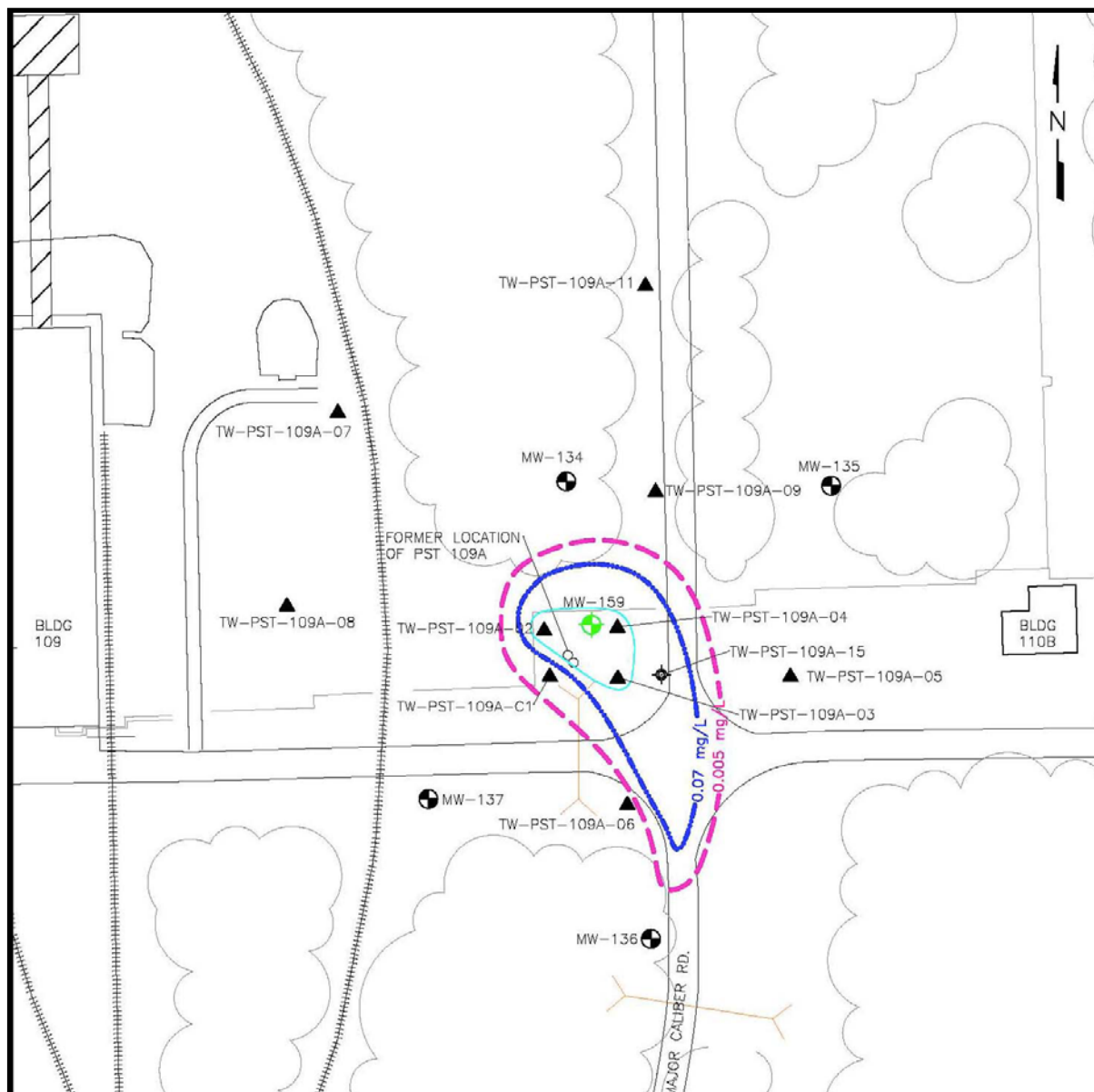
Complete a CMS for the groundwater contamination. Perform quarterly sampling for VOCs and geochemical parameters. Prepare an annual report presenting an evaluation of the data from latest sampling rounds.

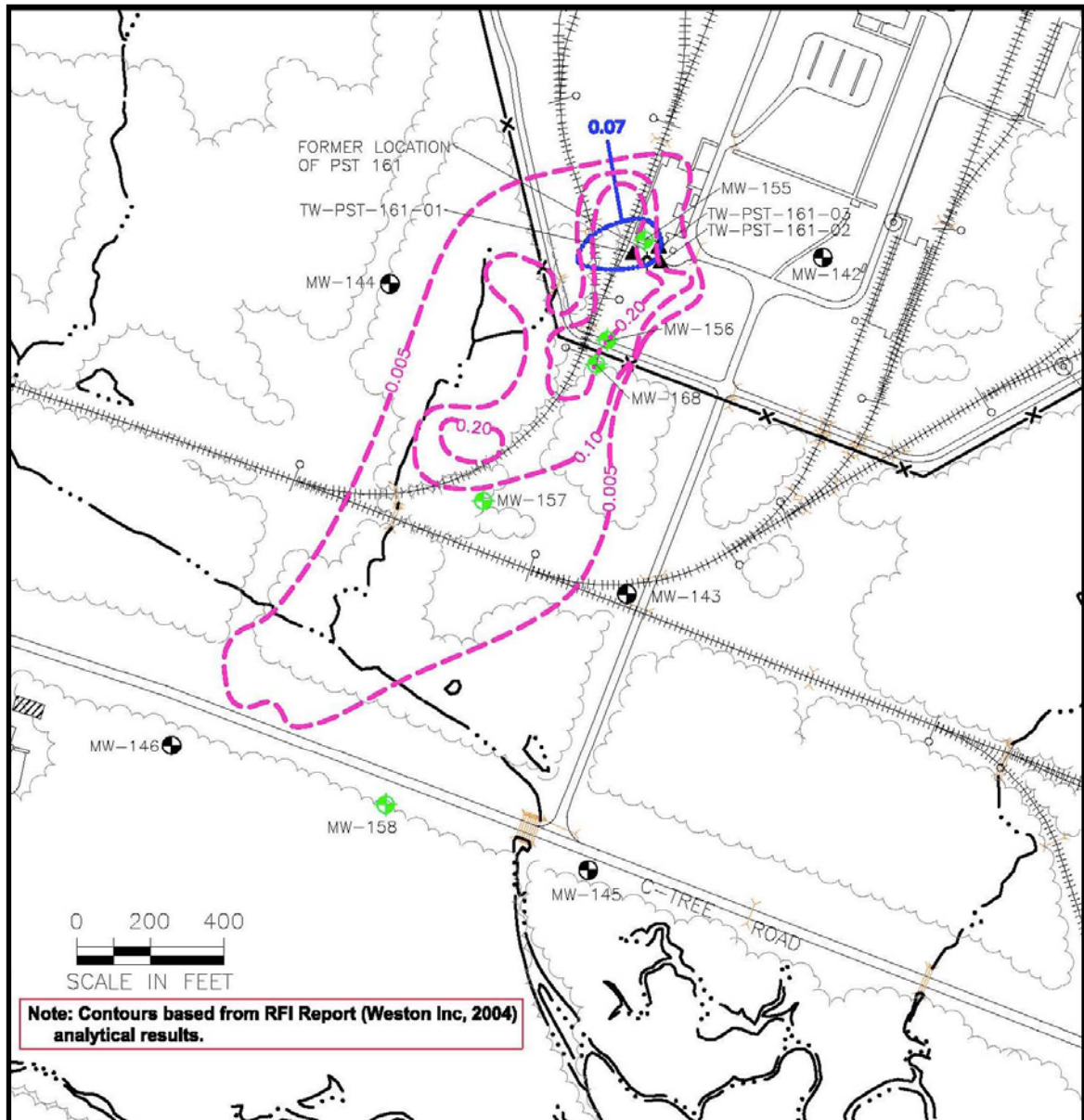
PSTs 103/109a - Perform quarterly monitoring and evaluation of VOCs and geochemical parameters for 2 years. Re-evaluate and report data collected, including, if appropriate, a petition to ODEQ for an alternate monitoring period. Reduce MNA sampling frequency to semi-annual after 8 quarters. After 2 years, the data will be compiled and re-evaluated. Modeling may be performed to demonstrate that affected groundwater will not reach a receptor. Exit Strategy: Within 5 years, a recommendation will be submitted to ODEQ to eliminate sampling.

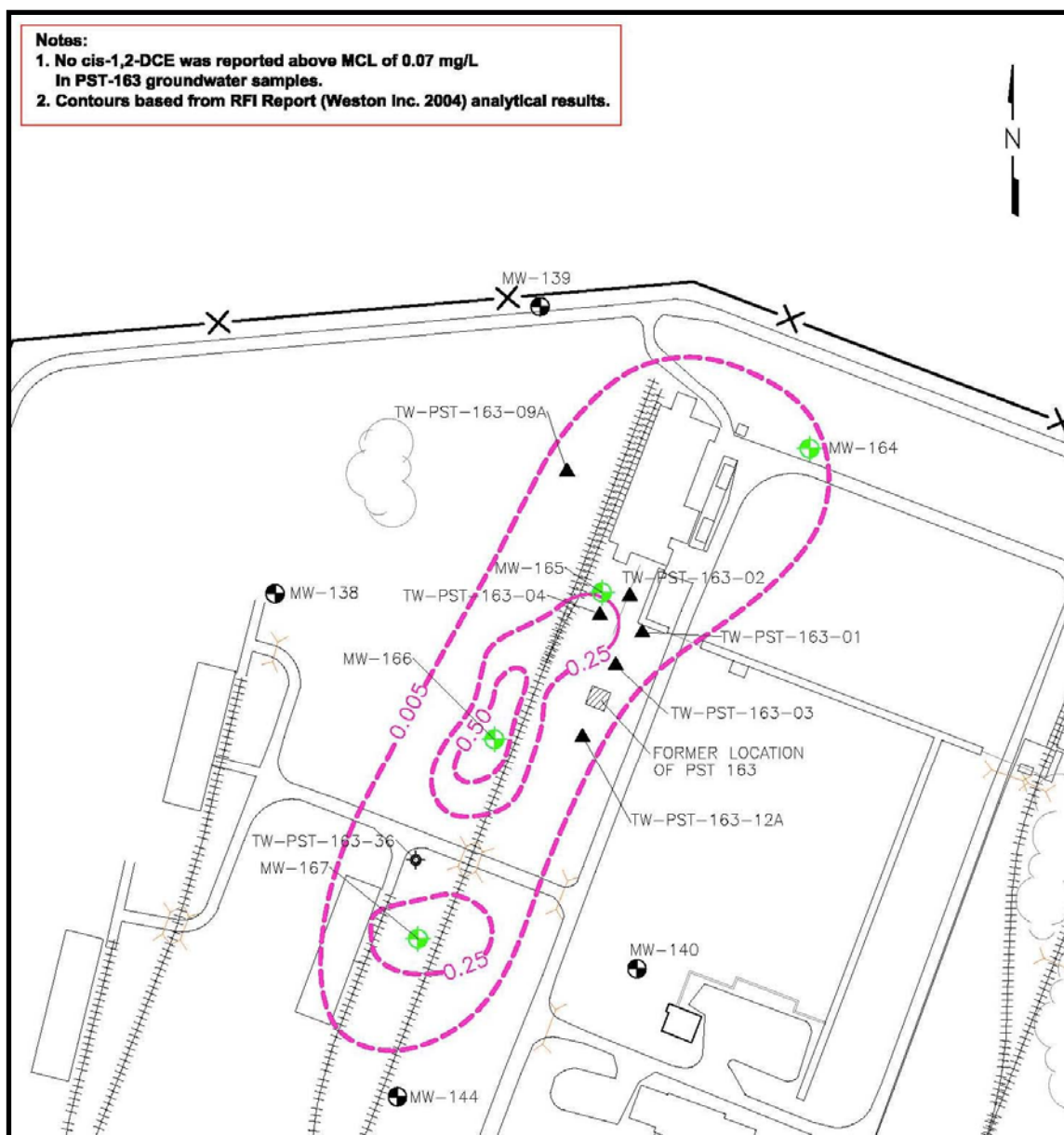
PSTs 161/163 - Perform quarterly monitoring and evaluation of VOCs and geochemical parameters for 2 years. Two additional wells may be installed within the plume at PST 161. Reduce MNA sampling frequency to semi-annual after 8 quarters. Re-evaluate and report data collected, including, if appropriate, a petition to ODEQ for an alternate monitoring period. A Risk Assessment may be performed. Exit Strategy: Within 10 years, a recommendation will be submitted to ODEQ to accept NFA at SWMU No. 48.

Well abandonment will occur as wells are no longer needed to support the monitoring.









MCALESTER AAP

INSTALLATION RESTORATION
PROGRAM

ER, A ELIGIBLE RC SITE WITH LTM

MCAAP-002**LANDFILL, SOUTHWEST OF BROWN LAKE****SITE DESCRIPTION**

This site is located 1,000 feet south of the western end of Brown Lake in the central section of the installation. The site was a general refuse landfill approximately 50 acres in size, and operated from 1967 until August 1990. Monitoring wells have been installed at the site and sampling results from those wells indicate metals and trichloroethylene (TCE) contamination above the National Primary Drinking Water Requirement standards.

The results of the Metcalf & Eddy RCRA December 1994 Facility Investigation & Risk Assessment showed that no complete exposure scenarios existed for groundwater, surface water, or sediment for an occupational receptor.

In accordance with EPA letter dated September 15, 1994, long-term groundwater monitoring was continued in accordance with ODEQ directives.

In March 2000, ODEQ approved the groundwater assessment, which included ceasing the long-term monitoring and abandoning the wells. The wells were abandoned in FY01. Documentation of well abandonment was submitted to and accepted by ODEQ in FY02 to complete closure requirements.

CLEANUP STRATEGY

Five-year reviews will be initiated to determine if the remedy is still protective of human health and the environment.

STATUS

RRSE: High

CONTAMINANTS: Metals

MEDIA OF CONCERN:

Groundwater

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206
RFI/CMS.....	199212	199409
LTM.....	200501	203605

RC: 199409

MCAAP-032**BUILDING 209 PALLET DIPPING OPERATION****SITE DESCRIPTION**

The site is located near the southwest corner of the Bomb Mine Area along Road 5 in the center section of the installation. The site is an open-sided, steel-girder structure set on a concrete block foundation. It is approximately 30 x 150 ft and was operational in the 1970s and 1980s. Wooden pallets were immersed into dipping vats, containing a pentachlorophenol (PCP) solution. Pallets were then allowed to drip dry. In the 1980s, PCP was replaced with copper-8-hydroxyquinolate.

Soil samples taken during the RFI revealed no PCP, but copper was detected above background and dioxins were detected in composite samples. The RFI recommended NFA based upon the low occupational exposure, and the EPA concurred.

ODEQ has accepted a risk and cleanup level of 5 ppb (dioxins), which is a value greater than observed site concentrations. The CMS for this site was accepted by ODEQ in February 2001 with the following conditions; (1) that the exposure assessment factors remain similar to those predicted in the human health risk assessment referenced in the Final Corrective Measure Study Report - Former Pallet Dipping Area - Bldg 209 - SWMU 32 and (2) that if the area usage should change, a reevaluation of the exposure assessment and risk assessment may be necessary. In order to comply with the RFI recommendation for NFA and the assumptions used in the risk assessment, some institutional controls are required to be maintained for the site. Controls include, but are not limited to the following: site access (signs, security personnel), site maintenance (gravel, surface runoff); use of appropriate personal protective equipment when handling effected soil; and minimization of activities that disturb soil conditions.

CLEANUP STRATEGY

A request for closure was accepted by ODEQ as part of the RCRA Part B Permit renewal. This site is considered closed, but is subject to be reopened by public comments during the permit renewal period.

Five-year reviews will be initiated to determine if the remedy is still protective of human health and the environment.

STATUS

RRSE: Medium

CONTAMINANTS: Dioxins

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199106	199206
CS.....	199212	199412
RFI/CMS.....	199901	200101
DES.....	200106	200408
CMI(C).....	200309	200409
LTM.....	200501	203605

RC: 200409

MCAAP-033**PALLET DIP OPERATION, BUILDING 471****SITE DESCRIPTION**

The site is located due north of the medium caliber area in the northeast section of the installation. The site is a covered crane-way area approximately 15 x 30 ft and was used from 1972 to 1974. Wooden pallets were dipped into a PCP solution and allowed to drip dry on the surrounding concrete.

Soil samples during the RFI revealed no PCP or copper levels above background. However, the supplemental RFI detected dioxins in composite samples. The RFI recommended NFA based upon the low occupational exposure and the EPA concurred. Increased activity in the area by DAC has increased the exposure potential beyond that used in the risk analysis estimated during the RFI. The CMS for this site, which included a detailed risk assessment, recommended NFA. ODEQ has accepted a risk and cleanup level of 5 ppb

(dioxins), which is a value greater than observed site concentrations. The CMS for this site was accepted by ODEQ in February 2001 with the following conditions; (1) that the exposure assessment factors remain similar to those predicted in the human health risk assessment referenced in the Final Corrective Measure Study Report - Former Pallet Dipping Area - Bldg 471 - SWMU 33 and (2) that if the area usage should change, a reevaluation of the exposure assessment and risk assessment may be necessary. In order to comply with the RFI recommendation for NFA and the assumptions used in the risk assessment, some institutional controls are required to be maintained for the site. Controls include, but are not limited to the following: site access (signs, security personnel), site maintenance (gravel, surface runoff); use of appropriate personal protective equipment when handling effected soil; and minimization of activities that disturb soil conditions.

CLEANUP STRATEGY

A request for closure was accepted by ODEQ as part of the RCRA Part B Permit renewal. This site is considered closed, but is subject to be reopened by public comments during the permit renewal period.

Five-year reviews will be initiated to determine if the remedy is still protective of human health and the environment.

STATUS

RRSE: High

CONTAMINANTS: Dioxins

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199106	199206
CS.....	199212	199412
RFI/CMS.....	199901	200101
DES.....	200106	200209
CMI(C).....	200208	200409
LTM.....	200501	203605

RC: 200409

MCAAP-043**MINOL BUILDING (BLDG 644)****SITE DESCRIPTION**

The site is located in the Bomb Mine Area in the center of the installation. The site was an abandoned one story, flat-topped, cement block building approximately 15 x 25 ft. In 1988, installation personnel sampled and discovered polychlorinated biphenyl (PCB) contamination of the structure (less than 15 ppm) and the soil (as high as 1600 mg/kg). On 25 January 1993, the installation notified EPA Region 6 that this was a new SWMU.

The RFI detected PCB 1242, PCB 1260, and TPH above acceptable EPA human health risk standards in the soils around the Minol building and PCB 1242/1260 in the structure at levels that exceed applicable health-based Applicable, Relevant and Appropriate Requirements (ARARs) for an occupational scenario. The EPA approved remediation of this site and issued temporary authorization to proceed with the removal of PCB-contaminated soils and structures to a level not to exceed 25 ppm.

In June 1994, a contract was awarded to remove the Minol Building, its associated piping and the surrounding soil, all of which were contaminated with PCBs. The fieldwork was completed in March 1995. It was determined that the contamination had spread downstream into a drainage swale. The swale area was remediated in February 1996. Final cleanup reports have been received and show the cleanup has achieved well below the 25 ppm specified. The Final Corrective Measures Completion Report for the Minol Building and Drainage Ditch South of Building 177 was submitted in July 1999 and accepted by the EPA on October 4, 2000.

CLEANUP STRATEGY

PCB contaminated soil has been left in place at concentrations well below 25 ppm in accordance with 40 CFR 761.61. This complies with federal guidelines associated with self-implementing on-site cleanup and disposal efforts for low occupancy areas. Five-year reviews will be initiated to determine if a change in land usage has occurred and if the remedy is still protective of human health and the environment.

STATUS

RRSE: High

CONTAMINANTS: PCBs

MEDIA OF CONCERN:

Soil, Sediment

PHASES	Start	End
RFA.....	198709	198809
CS.....	199212	199412
RFI/CMS.....	199301	199412
DES.....	199405	199412
IRA.....	199406	199811
CMI(C).....	199812	200002
LTM.....	200501	201505

RC: 200102

MCALESTER AAP

INSTALLATION RESTORATION
PROGRAM

ER, A ELIGIBLE RESPONSE
COMPLETE SITES

RESPONSE COMPLETE AEDB-R SITES

AEDB-R #	AEDB-R Title	RC Date	ER,A Eligibility
MCAAP-001	Landfill, Southeast of Brown Lake	199409	
MCAAP-003	Active Landfill	199206	Not Eligible
MCAAP-004	Landfill, NW of Bldg 52SH405	199206	
MCAAP-005	Scrap Metal Disposal Area	199409	
MCAAP-006	Landfill NE of 20mm Area	199206	
MCAAP-007	Disposal Area North of DRMO	199206	
MCAAP-008	Wood Scrap Yard	199206	Not Eligible
MCAAP-009	Landfill, Road 4	199206	
MCAAP-010	Landfill South of 71-BT Area	199206	
MCAAP-011	Landfill, Road Four and Road F	199206	
MCAAP-012	Group 41LC Lagoon & Landfill Area	199409	
MCAAP-013	Concrete Bomb Settling Ponds, Bldg 454	199206	Not Eligible
MCAAP-014	Concrete Bomb Settling Ponds, Bldg 455	199206	Not Eligible
MCAAP-015	Roundhouse Lagoons	199206	Not Eligible
MCAAP-016	Sewage Retention Lagoon	199206	Not Eligible
MCAAP-017	Bldg 186 Ponds and Lagoon	199206	
MCAAP-018	Deactivation Furnace/Lagoon	200209	
MCAAP-019	Rocket Lake	199409	
MCAAP-020	B Plant West Lagoon	199206	Not Eligible
MCAAP-021	B Plant East Lagoon	199206	
MCAAP-022	Medium Caliber Lagoon	199206	Not Eligible
MCAAP-023	Special Weapons Lagoons	199206	
MCAAP-024	C-Tree Lagoon	199206	
MCAAP-025	Active Open Burning Ground	199206	Not Eligible
MCAAP-026	Burn Area 2	200308	
MCAAP-027	Old Demolition Area	199206	Not Eligible
MCAAP-028	New Demolition Area	199206	Not Eligible
MCAAP-029	Sedimentation Retention Basin	199206	Not Eligible
MCAAP-030	Pink Water Treatment System	199206	Not Eligible
MCAAP-031	Pink Water Collection System	199206	Not Eligible
MCAAP-034	Deactivation Furnace	199206	Not Eligible
MCAAP-035	Suspect Acid Neutralization Pit	199206	
MCAAP-036	Burial Site	199206	
MCAAP-037	Waste Oil Storage Tank, RR House	199001	
MCAAP-038	DRMO Yard	199206	Not Eligible
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MCAAP-039	Hazardous Waste Storage Area, Bldg 669	199206	Not Eligible
MCAAP-040	Haz Waste Storage Bunkers Bldg 41-LC 103	199206	Not Eligible
MCAAP-041	Sewage Treatment Plant	199206	Not Eligible
MCAAP-042	Water Treatment Plant at Brown Lake	199206	Not Eligible
MCAAP-044	Brown Lake	199206	Not Eligible

MCAAP-001**LANDFILL, SOUTHEAST OF BROWN LAKE****SITE DESCRIPTION**

This site is located about 3,000 feet south of the east end of Brown Lake (MCAAP-44). The site is between four and five acres in size and is currently covered with vegetation. A small pond is present on the northwest side of the landfill. The site was operated as a trench and sanitary landfill between the late 1950s and the late 1960s. The RFI results indicated that there was no human health or ecological risk.

The EPA Region VI approved NFA in its acceptance of the RFI Report, December 1994. The state of Oklahoma issued a Part B permit on December 15, 1998, approving the NFA alternative.

STATUS

RRSE: NE

CONTAMINANTS: Metals, TCE

MEDIA OF CONCERN:
Groundwater

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206
RFI/CMS.....	199212	199409

RC: 199409

MCAAP-004**LANDFILL, NW OF BLDG 52SH405****SITE DESCRIPTION**

This site could not be located during the SWMU investigation, but is reportedly located northwest of Building 52SH405 near the northern boundary of the installation's property and covers approximately 5 acres. This site was described in 1986 as being identified only through finding traces of exposed scrap metal, crushed drums and containers with the majority of the contents apparently scrap metal.

There is no documented evidence of release from this site. The exposure potential is low to medium, since the site is located within 1/4 mile of the installation boundary.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN: None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-005**SCRAP METAL DISPOSAL AREA****SITE DESCRIPTION**

MCAAP-05 is located 1.1 miles due north of the Major Caliber area in the northeast section of the installation. The site is a scrap metal disposal area with two, small lagoons and is 10 acres in size. Materials observed at the site include an assortment of scrap metal refuse including cans, buckets, drums, rocket bodies, incinerator refuse and electrical refuse.

The RFI recommended NFA due to the absence of a human health risk and low ecological impact. The EPA Region VI agreed with NFA for this site and sanctioned application for a class 3 permit modification. The ODEQ issued a Part B permit on December 15, 1998 approving the NFA alternative.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206
RFI/CMS.....	199212	199409

RC: 199409

MCAAP-006**LANDFILL NE OF 20MM AREA****SITE DESCRIPTION**

This landfill is located about 500 feet northwest of the intersection of Road G and Road 3 and covers 2 to 3 acres.

The operating practices of this site may have been a dumping site for demolition debris and possibly sludge from the concrete bomb lagoons. The period of operation is from the mid-1950s through late 1970s.

The exposure potential has been determined to be low because the material disposed of here is relatively inert and there are no migration pathways or visual evidence of releases observed.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-007**DISPOSAL AREA NORTH OF DRMO****SITE DESCRIPTION**

This site presently consists of a quarried-out area filled with water located along the east side of Road G, approximately 2,000 feet north of DRMO. This area is approximately 2.5 acres and reportedly was a disposal area. This site is identified from a map entitled "Locations of Approved Borrow Pits and Areas for Scrap and Refuse Disposal," dated May 10, 1977. The site is shown as "disposal and dumping location for rock, broken concrete, and soil."

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-009**LANDFILL, ROAD 4****SITE DESCRIPTION**

This landfill is located along both sides of Road 4, about 1,000 feet east of the intersection with Road F. The total combined area of this landfill is about 2-3 acres and was mostly demolition debris.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-010**LANDFILL SOUTH OF 71-BT AREA****SITE DESCRIPTION**

This landfill is located south of the Group 71-BT area, southwest of the 90° bend in Road F. This landfill is approximately 3 acres and was reportedly active between the 1950s and 1970s. The type of waste placed in the site is unknown, although rocket bodies, metal boxes, wire, and concrete rubble have been observed on the site.

The USAEHA report for the “Evaluation of Solid Waste Management Units MCAAP,” March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-011**LANDFILL, ROAD FOUR AND ROAD F****SITE DESCRIPTION**

This landfill is located 100 yards east of the intersection of Road 4 and Road F, 100 yards south of Road 4. This landfill is approximately 1.5 acres and was reportedly active between 1962 and 1967. The site was apparently a borrow pit that was backfilled with demolition type waste. There is no observed or documented evidence of release from the site.

The USAEHA report for the “Evaluation of Solid Waste Management Units MCAAP,” March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-012**GROUP 41LC LAGOON AND LANDFILL AREA****SITE DESCRIPTION**

The site is located south of the 41 LC Bunker Area in the north central part of the installation and consists of an 8-10 acre dump area between two lagoons. The lagoons are about 5 acres each. The site was operated from the late 1940s through the 1950s.

During the RFI, the lagoon waters, sediment, and soil were sampled. Water samples were analyzed for volatile and semi volatile organics, metals, explosives, pesticides, and nonmetals including cyanide, total nitrogen, and sulfates. Sediment and soil samples were analyzed for metals and explosives. The RFI recommended NFA due to the absence of a human health risk and low ecological impact. The EPA Region VI agreed with NFA for this site and sanctioned application for a class 3 permit modification. The ODEQ issued a Part B permit on December 15, 1998 approving the NFA alternative.

STATUS

RRSE: NE

CONTAMINANTS: Metals, Organics

MEDIA OF CONCERN:
Surface Water, Sediments

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206
RFI/CMS.....	199212	199409

RC: 199409

MCAAP-017**BLDG 186 PONDS AND LAGOON****SITE DESCRIPTION**

There is a lagoon and three earthen ponds located on either side of Road E, north of Building 186. These ponds received pinkwater wastes from an ammunition steam-out operation in Building 186. Between 1971 and 1974, wastes were piped into, what is now termed, Pond 4. In 1974, Ponds 2 and 3 were constructed; from 1974 to 1980, wastewater flowed consecutively into Ponds 2, 3, and 4. In 1980, Pond 1 (the lagoon) was constructed adjacent to Building 186 to hold wastewater prior to its discharge to the stream, which flows into Pond 2.

In 1987, the EPA Region VI agreed that the pinkwater lagoons were non-RCRA regulated on the basis of Bureau of Mines reactivity testing. ODEQ granted and approved the closure of Pond 1. The remaining earthen Ponds 2, 3 and 4 are being used for storm water outfall.

STATUS

RRSE: NE

CONTAMINANTS: Explosives

MEDIA OF CONCERN:
Sediments

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-018**DEACTIVATION FURNACE/LAGOON****SITE DESCRIPTION**

The lagoon (approximately 35 x 75 ft) was located about 150 ft north of the deactivation furnace near the center of the installation. Lead was found in the lagoon sediment and in drainage paths around the lagoon. The human health risk assessment indicated unacceptable soil lead levels. Following the RFI recommendation and the EPA directive, a Corrective Measures Study (CMS) was performed during FY96 and FY97. The CMS was submitted for regulatory review in FY97 with the preferred alternative of removal with stabilization and off-site disposal. In FY99, the contaminants were removed to meet industrial standards, the lagoon drained, and the area sloped for drainage.

The ODEQ issued a Part B Permit modification on December 15, 1998, accepting the Interim Remedial Action (IRA) as the approved RA.

ODEQ approved all final documentation in March 2000. Contract close out was completed in September 2002.

STATUS

RRSE: High

CONTAMINANTS: Lead

MEDIA OF CONCERN:

Soils, Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199212	199412
RFI/CMS.....	199602	199712
DES.....	199712	199806
IRA.....	199806	199812
CMI(C).....	199812	200001
CMI(O)	200202	200206

RC: 200209

MCAAP-019

ROCKET LAKE

SITE DESCRIPTION

Rocket Lake is located east of Road F and west of the Motor Loading Plant in the center of the installation. This site is a 10-acre lake that received explosives-contaminated wastewater until 1990 from the Bomb Mine Areas and the Motor Loading Plant. The outfall from Rocket Lake is a tributary to Brown Lake (MCAAP-44). During the RFI, the lake water and sediments were sampled to determine the presence of explosives and metals.

Results from the RFI indicated the presence of low levels of metals. The concentrations were below acceptable levels of non-cancer hazard or carcinogenic risk levels. The ecological risk assessment found no associated risks. The RFI recommended NFA for this site and the EPA Region VI approved it. ODEQ issued a Part B Permit on December 15, 1998, approving the NFA alternative.

STATUS

RRSE: NE

CONTAMINANTS: Metals

MEDIA OF CONCERN:
Surface Water, Sediments

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206
RFI/CMS.....	199212	199409

RC: 199409

MCAAP-021

B PLANT EAST LAGOON

SITE DESCRIPTION

Three earthen, unlined lagoons are located south of Road 5 in the Bomb and Mine Plant east-end facility, and operated between 1980 and 1990.

During their active usage, these lagoons received about 600,000 gallons of pinkwater wastes per year. In 1987, the EPA Region VI agreed that the pinkwater lagoons were non-RCRA regulated on the basis of Bureau Mines reactivity testing. In 1989, ODEQ agreed with the EPA Region VI determination.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Explosives

MEDIA OF CONCERN:
Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-023

SPECIAL WEAPONS LAGOONS

SITE DESCRIPTION

This lagoon is located south of Rocket Lake (MCAAP-19) and northeast of Building 567. This is an unlined 60 x 120 ft earthen impoundment.

The period of operation was from the 1970s until November 1991. During its early operation, small quantities of wastes from electroplating operations, anodizing, and a chemical treatment solution were placed in this area. The earthen impoundment was also used to contain domestic sewage. There is no observed or documented evidence of release from this site.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Metals

MEDIA OF CONCERN:

Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-024

C-TREE LAGOON

SITE DESCRIPTION

This site is a triangular-shaped, earthen lagoon located southeast of the intersection of C-Tree Road and Road G. The lagoon is located next to a pad originally used to wash trucks, and catch the runoff and rinse water from the truck wash. Wastes were not disposed of at this site; however, chlordane and lead were found in the sediment. The lagoon is presently intact and contains water.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Chlordane, Lead

MEDIA OF CONCERN:

Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-026

BURN AREA 2

SITE DESCRIPTION

This site is located south of C-Tree road and west of the entrance to the Medium Caliber Area in the eastern portion of the installation. The site is a former burn area; approximately 23 acres in size that contained several burn cages with blast walls around the burn cages to contain any debris from the burn operations. The site was operated from the mid-1940s to the mid-1960s. The site borders the western edge of Brown Lake (MCAAP-44). The results of the RFI found lead levels associated with unacceptable predicted blood lead levels for occupational scenarios.

The RFI recommended a CMS to determine the most viable method of eliminating the lead hazard. The EPA agreed with the recommendation and directed a CMS be performed. The fieldwork for the CMS was completed in FY 96. The CMS was submitted for regulatory review in FY 97 with the preferred alternative of removal with stabilization and off-site disposal. The ODEQ issued a Part B Permit modification on December 15, 1998 accepting the CMS Proposed Plan as the approved RA.

Fieldwork was completed to meet industrial standards in February 2000. ODEQ approved the closure report in August 2000. A Correctives Measures Completion Report was submitted to and approved by ODEQ in FY02.

STATUS

RRSE: High
CONTAMINANTS: Lead
MEDIA OF CONCERN:
 Soil, Sediment

<u>PHASES</u>	<u>Start</u>	<u>End</u>
RFA.....	199106	199206
CS.....	199212	199412
RFI/CMS.....	199601	199910
DES	199808	200201
CMI(C).....	199912	200307

RC: 200308

MCAAP-035**SUSPECT ACID NEUTRALIZATION PIT****SITE DESCRIPTION**

This site is located 200 feet west of Building 452 and consists of a pit excavated out of the hill. The pit is about 30 x 125 ft in size and 3-4 ft deep.

The period of operation and the operating practices are unknown. This pit was “discovered” during the original EPA RCRA Facility site visit and no other documentation has been found concerning the pit. The location of the pit, with no visible vehicle access, makes it an especially unlikely area for any waste treatment. The EPA Region VI reported “evidence of discoloration in and around the pit area.” This evidence was not observed during the USAEHA investigation.

The USAEHA report for the “Evaluation of Solid Waste Management Units MCAAP,” March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-036

BURIAL SITE

SITE DESCRIPTION

This site is located in the 45 DC area behind Magazine 107.

Reportedly, a one-time burial occurred in January 1965. Approximately 200 pounds of sodium cyanide were converted to ferrocyanide by reaction with sodium carbonate and ferrous sulfate in aqueous solution. This solution was drained into ten holes approximately 18 inches in diameter and 7 ft deep and was allowed to seep into the ground. Loose dirt was replaced in the holes. No visible evidence of an actual burial site could be found during the USAEHA investigation. The exposure potential is low.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Ferrocyanide

MEDIA OF CONCERN:

Groundwater

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-037**WASTE OIL STORAGE TANK, RR HOUSE****SITE DESCRIPTION**

This site is located near the Railroad Engine Roundhouse (Buildings 10, 10a, and 10b). A 1,000 gallon underground storage tank was used to collect waste oil from 10B via an underground fill line.

A reportable spill of diesel was discovered flowing into an unnamed tributary of Brown Lake in February 1994. It was reported that a clay drainpipe leading from the Railroad Roundhouse Area to the lake served as the route for the spill. A preliminary investigation conducted in March 1994 detected the presence of diesel in the subsurface soils in the area of the Railroad Engine Roundhouse. The spill was contained and the pipeline capped in 1994. A site investigation was conducted in June 1995 and April 1996. The UST was removed in September 1998. Additional investigation activities indicated that soil samples collected from the site reported TPH concentrations below 50 ppm. Groundwater water wells installed at the site did not detect the presence of TPH. In September 1999, a Final Removal and Disposal of Petroleum Hydrocarbons Contaminated Material and Soil in the Roundhouse Area Report was submitted to ODEQ and accepted by ODEQ the same month.

STATUS

RRSE: NE

CONTAMINANTS: TPH

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	198905	198906
CS.....	198906	198907
RFI/CMS.....	198907	198908
DES	198908	198909
CMI(C).....	198909	199001

RC: 199001

MCAAP-045

ROUNDHOUSE COMPLEX

SITE DESCRIPTION

The Roundhouse Complex (Buildings 10, 10-A, and 10-B) is located in the administrative area, within approximately 300 yards of a backwater lagoon of Brown Lake (MCAAP-44). It is a train maintenance and staging area in use since 1945. In February 1994, a reportable spill of petroleum was detected spilling into the backwater and appeared to be coming from an old drainage pipe that had been capped in 1986. The site inspection (SI) found excessive levels of TPH, but no volatile organic compounds or significant metals content. The SI was submitted to ODEQ with a recommendation to not designate this site as a SWMU and to clean up TPH to the Oklahoma Corporation Commission levels. By a letter dated 30 September 1999, ODEQ accepted the RA removal of the TPH contaminated soils, which was completed in the first quarter of FY99 with non-ER,A funds.

STATUS

RRSE: High (Due to spill release to drinking water)

CONTAMINANTS: TPH

MEDIA OF CONCERN:
Soil

PHASES	Start	End
RFA.....	199106	199206
CS.....	199402	199808
RFI/CMS.....	199808	199808
DES	199808	199808
CMI(C).....	199808	199809

RC: 199909

MCAAP-047

PCB CONTAMINATION DETENTION AREA

SITE DESCRIPTION

The PCB Contamination Detention Area was used as a water detention area for outflows from the MCAAP water treatment plant. The site was investigated in 1995 and 1997 by collecting 32 soil samples and two surface water samples. Analytical results indicated that elevated concentrations (above EPA Region VI allowed levels) of PCBs were present in two small areas at depths of 5 feet or less.

Work plans were submitted to and approved by EPA and ODEQ in 2002. The contaminated soil was removed and the site restored during the summer of FY02.

The Final Remedial Action Completion Report for the site was submitted to the EPA and ODEQ in August 2004 for their review and concurrence of No Further Action. A NFA letter was received from the EPA on January 24, 2005.

STATUS

RRSE: Low

CONTAMINANTS: PCBs

MEDIA OF CONCERN:
Soil

PHASES	Start	End
RFA.....	199505	199903
CS.....	200010	200103
RFI/CMS.....	200103	200106
CMI(C).....	200106	200501

RC: 200501

MCALESTER AAP

**INSTALLATION RESTORATION
PROGRAM**

**NON-ER, A ELIGIBLE RESPONSE
COMPLETE SITES**

MCAAP-003

ACTIVE LANDFILL

SITE DESCRIPTION

This is an active landfill located northwest of the corner of the intersection of Ashland Road and Road B. This landfill covers 49 acres. The trenches are 30 ft wide and 10 ft deep. The operation date of this landfill is August 1, 1990, until present.

MCAAP has a permit for this landfill to operate and maintain as a Type V Non hazardous Waste facility.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998. Closure will be conducted in accordance with existing National Pollution Discharge Elimination System (NPDES) permit requirements.

This site is listed as a landfill, Permit Number 3561014, with the Solid Waste Division ODEQ. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

<u>PHASES</u>	<u>Start</u>	<u>End</u>
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-008

WOOD SCRAP YARD

SITE DESCRIPTION

This is an active wood scrap yard. It is located northeast of the intersection of Road 4 and F. It is approximately 5 acres. This site is currently covered with scrap wood and lumber.

Scrap wood and lumber from the installation are stored for future reuse at this site. An old burning area, reportedly used to burn waste munitions, is apparently located somewhere under the scrap wood. According to a June 1977 Trip and Visit Report, TNT, ammonia picrate and smokeless powder were burned at the burning area. The exposure potential is low. The runoff from the scrap wood area enters a tributary to Brown Lake. There is no documented evidence of release.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Explosives

MEDIA OF CONCERN:
Soil, Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-013**CONCRETE BOMB SETTLING PONDS, BLDG 454****SITE DESCRIPTION**

These are industrial waste lagoons located between Buildings 453 and 454 in the Medium Caliber Area. There are four earthen lagoons of various sizes.

The period of operation dates from 1986 until present. These lagoons treat cement-contaminated waste and wash water from the manufacture of concrete practice bombs. The wastewater enters Lagoon 1 for heavy settling. Final settling occurs in Lagoon 2. A carbon dioxide - sulfamic acid mixture is added and mixed into the water in Lagoon 3. Lagoon 4 is a holding lagoon for final discharge to the wastewater treatment plant.

This site is listed as a surface impoundment in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-014**CONCRETE BOMB SETTLING PONDS, BLDG 455****SITE DESCRIPTION**

These are industrial waste lagoons located east of Building 455 in the Medium Caliber Area. There are two earthen lagoons about 12 x 40 ft each.

The period of operation dates from 1986 until present. These lagoons are used to hold cement-contaminated waste and wash water from the manufacture of concrete practice bombs. Wastewater from Building 455 is held here prior to being pumped to the Building 454 lagoons for treatment and discharge. The lagoons are still being used.

This site is listed as a surface impoundment in NPDES, Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: TPH

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-015

ROUNDHOUSE LAGOONS

SITE DESCRIPTION

The Roundhouse lagoons are located approximately 100 ft northwest of Building 8. The two earthen lagoons are approximately 50 ft in diameter, and about 3-4 ft deep.

The period of operation is unknown. The lagoons received wastewater runoff from the steamoff and washdown of locomotive engines in the Roundhouse. Washdown was piped from a sump in the Roundhouse to the eastern lagoon. Reportedly, oil waste and possibly solvents from the maintenance shops were discharged here. This discharge was a NPDES discharge point until the fall of 1991, when it was connected to the Wastewater Treatment Plant.

This site is listed as a surface impoundment in NPDES, Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: TPH, Solvents

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-016

SEWAGE RETENTION LAGOON

SITE DESCRIPTION

This sewage retention lagoon is located at the northwest corner of C-Tree Road and the entrance to Medium Caliber area. It is approximately 1.7 acres.

The period of operation is 1988 until present. This lagoon is used to store excess sewage from industrial areas. Sewage is piped from the lagoon to the sewage treatment plant.

This site is listed as a surface impoundment in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-020

B PLANT WEST LAGOON

SITE DESCRIPTION

This is an earthen lagoon located about 1/4 mile northwest of the intersection of Road 5 and Road E, with about 1-acre surface area and a capacity of about 1 million gallons.

Explosives-contaminated wastewater and domestic type sewage wastes were placed in this lagoon; the period of operation was 1968 until the early 1990s. Lagoon water, sediment, and groundwater samples from the lagoon area were collected as part of the development of a groundwater quality assessment plan completed in 1982.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a surface impoundment in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives

MEDIA OF CONCERN:

Surface Water

<u>PHASES</u>	<u>Start</u>	<u>End</u>
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-022**MEDIUM CALIBER LAGOON****SITE DESCRIPTION**

This site is located west of the Medium Caliber Area. There are two earthen lagoons, with a combined area of 3.5 acres and a maximum depth of 6 ft.

The period of operation is 1974 until present. Past wastes have included domestic sewage, explosives-contaminated laundry wastewater, organic detergents, and pinkwater from the medium caliber area.

Presently, only laundry wastewater is discharged here. The NPDES discharge point from the lagoons was #005. Groundwater samples from the lagoon area were collected as part of the development of a groundwater quality assessment plan completed in 1982.

This site is listed as a surface impoundment in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-025**ACTIVE OPEN BURNING GROUND****SITE DESCRIPTION**

This approximately 10-acre site is located along the north side of Road 6, east of its intersection with Road F. The site consists of five burning pads, two flashing trenches, and three rocket static firing pads.

The waste treated at the site includes propellants and explosive materials.

Trenches are used to flash-burn explosive contaminated materials.

The USAEHA investigated this site in August 1981. Four monitoring wells were installed and 66 soil samples were collected. The sample results indicate that no release to groundwater has occurred. The exposure potential is low.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a permitted Open Burn Unit in RCRA Part B Permit Number #6213822798 as modified August 6, 1999. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
Groundwater, Soil

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-027

OLD DEMOLITION AREA

SITE DESCRIPTION

This is an active site located near the southeast corner of the installation, about 2 miles south of Brown Lake (MCAAP-44). The total site area covers about 40 acres. The site consists of 26 pits. Each pit is about 15 x 30 ft surrounded by a horseshoe-shaped berm about 15 ft high.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a permitted Open Detonation Unit in RCRA Part B Permit Number #6213822798 as modified August 6, 1999. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives,
Metals

MEDIA OF CONCERN:
Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-028

NEW DEMOLITION AREA

SITE DESCRIPTION

This site is located along the south side of Road 6, east of the Road F intersection. The total site area covers about 5 acres. The site consists of twenty-six 15 x 30 ft pits, surrounded by horseshoe-shaped berms about 15 feet high. Ordnance is detonated in the pits. Ordnance to be detonated is set inside the bermed area and buried with about 8-9 cubic yards of soil before detonation.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as an Open Detonation Unit in RCRA Part B Permit Number #6213822798 as modified August 6, 1999. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives,

MEDIA OF CONCERN:
Groundwater, Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-029

SEDIMENTATION RETENTION BASIN

SITE DESCRIPTION

This site is located southeast of the new open detonation area. The basin is 150 x 200 ft, has a capacity of 3 million gallons, and is composed of 8 ft high berms and a 2 ft thick clay liner. This basin captures runoff from the New Open Detonation Area. The USACE performed a groundwater assessment of the sedimentation retention basin down gradient of this site in 1988. Contamination was not indicated in the water samples from the sedimentation retention basin.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a sedimentation lagoon in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives,

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-030**PINK WATER TREATMENT SYSTEM****SITE DESCRIPTION**

This is an industrial waste treatment unit located in Building 192A, in the “A” Plant of the Bomb Mine Area.

The period of operation is 1990 until present. This is an active unit, providing treatment for MCAAP’s explosives contaminated wastewater.

The USAEHA report for the “Evaluation of Solid Waste Management Units MCAAP,” March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a pinkwater treatment system in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives,

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-031**PINK WATER COLLECTION SYSTEM****SITE DESCRIPTION**

This site is located in the Bomb Mine Area. This is an industrial waste storage unit. There are a total of 15 concrete sumps and three, 15,000 gallon, above-ground, steel tanks interconnected by concrete trenches.

The sumps and tanks have been in active use since 1990. The explosives contaminated wastewater is accumulated in the sumps until it is pumped to holding tanks. From the holding tanks, it is trucked to the pink water treatment plant at building 192A.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a pinkwater treatment plant outfall No. 2 in NPDES Permit Number OK0000523. Closure will be conducted in accordance with existing NPDES permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: Explosives,

MEDIA OF CONCERN:

Surface Water

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-034**DEACTIVATION FURNACE****SITE DESCRIPTION**

The furnace has a series of conveyors that transport the waste (munitions) into the feed chute at the low temperature end of the rotary kiln incinerator. The kiln ignites the munitions and burns out the reactive components from within the metal shells. High order detonations are contained within the retort walls, which are 2.5 inches thick at the ends and 3.25 inches at the center. Scrap metal passes from the retort to the discharge conveyor into a chute and is collected in an approved hazardous waste container positioned at the discharge end of the chute. Gases, ashes, and other residues escaping from the retort are routed through the Air Pollution Control System (APCS). The APCS is comprised of an afterburner, two gas coolers, cyclone separator, baghouse, compressor, induced draft fan, and associated ducting.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a thermal treatment unit in RCRA Part B Permit Number #6213822798 as modified September 1997. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-038

DRMO YARD

SITE DESCRIPTION

This site is located on the east side of Road G, approximately 3.5 miles east of the installation entrance. This site is approximately 10 acres.

The period of operation is June 1973 until present. Materials stored include various metal items, such as cans that have been compressed into bails, demilled bomb bodies, munitions casings, steel bandings and wooden pallets. Scrap material is either piled or stacked at various locations across the site.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-039**HAZARDOUS WASTE STORAGE AREA, BLDG 669****SITE DESCRIPTION**

This hazardous waste storage site is a concrete block structure, located inside the DRMO yard near the northern fence. It is a 2,400 square feet storage area and a 900 square feet load/unload pad. The storage area contains three storage modules approximately 20 x 20 ft each.

Materials stored here include paints, solvents, demilitarization ash and production wastes stored in drums. A RCRA Part B Permit was issued for this site effective September 2, 1992. The first waste was placed into this site in November 1992.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP", March 1992, recommended no further investigation/response complete. This response complete recommendation was accepted in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is listed as a permitted hazardous waste storage unit in RCRA Part B Permit Number #6213822798 issued September 2, 1992. Closure will be conducted in accordance with existing RCRA permit requirements.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:

None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-040**HAZARDOUS WASTE STORAGE BUNKERS BLDG
41LC 103****SITE DESCRIPTION**

This site is located east of Brown Lake (MCAAP-44) and about 1/2 mile west of the entrance gate, south of C-Tree Road.

The period of operation is 1941 until November 1992.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN: None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-041**SEWAGE TREATMENT PLANT****SITE DESCRIPTION**

This site is located east of Brown Lake (MCAAP-44) and about 1/2 mile west of the entrance gate, south of C-Tree Road. The site is composed of various buildings and structures, sludge beds, and surface impoundments necessary to treat sewage from the installation.

The period of operation is 1941 until present.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is regulated under the NPDES Permit Number OK0000523. When declared inactive, Closure of the site and associated structures will be conducted in accordance with existing NPDES permit requirements and other state and federal regulations.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

MCAAP-042**WATER TREATMENT PLANT AT BROWN LAKE****SITE DESCRIPTION**

This site is located east of Brown Lake (MCAAP-44) and about 1/2 mile west of the entrance gate, south of C-Tree Road. The site is composed of various buildings and structures necessary to treat water used to service the installation and surrounding communities. The period of operation is 1941 until present.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

This site is regulated under the NPDES Permit Number OK0000523. When declared inactive, Closure of the site and associated structures will be conducted in accordance with existing NPDES permit requirements and other state and federal regulations.

STATUS

RRSE: NE

CONTAMINANTS: None

MEDIA OF CONCERN:
None

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

**MCAAP-044
BROWN LAKE****SITE DESCRIPTION**

Brown Lake is a 560-acre lake that is the source of drinking water for the installation, as well as, for two small towns located adjacent to the installation. Besides being the drinking water source, Brown Lake is also the major recreational site for installation personnel and their families. Prior to the RFA completed in 1991 by USACHPPM, the lake sediments and waters were sampled by EPA in 1987. No contamination was found.

The USAEHA report for the "Evaluation of Solid Waste Management Units MCAAP," March 1992, recommended no further action. This response complete recommendation was accepted by the EPA and is reflected by its absence in Section IV of the RCRA Part B Permit issued September 1992 and modified in December 1998.

STATUS

RRSE: NE

CONTAMINANTS: Explosives

MEDIA OF CONCERN:
Surface Water, Sediment

PHASES	Start	End
RFA.....	199106	199206
CS.....	199106	199206

RC: 199206

Schedule

PAST MILESTONES

- 1988** Installation Assessment Completed
- 1992** USAEHA completed evaluation of Solid Waste Management Units
- 1994** Awarded contract for IRA at MCAAP-043
PA for MCAAP-045 completed
SI for MCAAP-045 awarded
- 1995** Completed work plan for CMS at MCAAP-018 and MCAAP-026 (March)
Awarded CMS for MCAAP-018 and MCAAP-026 (June)
- 1996** Received final report for MCAAP-045
- 1997** Awarded CMIP for MCAAP-018 (November)
- 1998** Awarded CMIP for MCAAP-026 (March)
Awarded contract for IRA at MCAAP-018 (December)
Completed workplan CMS for MCAAP-032 and MCAAP-033 (November)
Complete IRA for MCAAP-043
- 1999** Awarded contract for CMI(C) for MCAAP-026 (May)
Awarded contract for CMS for MCAAP-032 and MCAAP-033 (March)
Submitted Groundwater Assessment Closure Report to ODEQ for MCAAP-002 (March)
Received Final Report for MCAAP-018 (July)
Received Final Report for MCAAP-045 (September)
- 2000** Corrective Measures Completion Report accepted by ODEQ for MCAAP-018 (March)
Corrective Action Report Accepted by ODEQ for MCAAP-026 (September)
Completed Preliminary Assessment for Former Scrap Metal Baler Area (MCAAP-046) (August)
EPA approved Corrective Measures Completion Report for MCAAP-043 (October)
EPA accepted IRA as final RA for MCAAP-043 (October)
- 2001** Completed RFA on MCAAP-047 and MCAAP-048
ODEQ approved CMS for MCAAP-032 & MCAAP-033 (February)
Awarded CMS for MCAAP-046 and MCAAP-048
EPA awarded contract for CMI(C) for MCAAP-047
EPA awarded contract for IRA for MCAAP-048
- 2002** ODEQ Approved Final Work Plan CMS for MCAAP-048 (May 2002)
EPA approved CMIP Work Plan for MCAAP-047 (May 2002)
Fieldwork at 10 PST sites and 13 UST sites completed (January 2002)
CMI(C) completed at MCAAP-047

Schedule

PAST MILESTONES

- 2003** Completed Phase II at 4 of 10 PST sites (MCAAP-048)
 ODEQ approved CMS Phase 1 (Addendum # 2) for MCAAP-048 (July 2003)
 ODEQ approved CMS (Addendum # 2) for MCAAP-046 (August 2003)
 ODEQ approved CMS (Addendum #3) for MCAAP-046 (October 2003)
 Completed Phase II at MCAAP-046
- 2004** Completed field investigation for 4 of the 10 PST supplemental activities
 Awarded contract for RI Phase III of 4 PST sites
 ODEQ approved CMS (Addendum #4) for MCAAP-046 (November 2004)
- 2005** ODEQ approved CMS (Addendum #5) for MCAAP-046 (January 2005)
 ODEQ received final RFI addendum report MCAAP-048, PST (February 2005)
 ODEQ received final Soil RFI report for MCAAP-046 (May 2005)
 Completed closure of MCAAP-047
 Completed IRA at MCAAP-048
 Submitted application for RCRA permit renewal

PROJECTED MILESTONES

Phase Completion Milestones: Complete installation-wide Five Year Review
 Complete monitoring at MCAAP-046 and 048

Construction Completion: 2009

Completion Date of all RA(C) Activities: 2009

Completion Date of IRP (including LTM phase): Indefinite

McAlester AAP IRP Schedule

(Based on current funding constraints)

CURRENT PHASE

FUTURE PHASE

AEDB-R#	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
MCAAP-002	LTM										203605
MCAAP-032	LTM										203605
MCAAP-033	LTM										203605
MCAAP-043	LTM										201505
MCAAP-046	RFI/CMS										
	DES										
	CMI(C)										
	CMI(O)										202609
MCAAP-048	RFI/CMS										
	CMI(C)										
	CMI(O)										202009

Cost

PRIOR YEAR FUNDING

FY 76-90

Environmental Assessment \$50K
(Non-ER,A funds)

FY 91-92

No Activity

FY 93

RFI/RI - RFI Workplan, RFI \$1,139K
Support \$5K **\$1,144K**

FY 94

PA/SI - Roundhouse \$261K
RFI/RI \$212K
REM - Minol \$712K
CMS/FS \$105K
Support \$5K **\$1,295K**

FY 95

REM/IRA \$77K
PA/SI \$44K
CMS/FS \$293K
LTM \$63K
Support \$5K **\$482K**

FY 96

SI \$26K
REM/IRA \$53K
CMS/FS \$90K
LTM \$38K **\$207K**

FY 97

LTM \$54K
CMS/FS \$30K
REM/IRA \$65K
SI \$8K
RAB \$10K **\$167K**

Cost

PRIOR YEAR FUNDING

FY 98

CMI/RA	\$480.4K	
CMI/RD	\$87K	
LTM	\$76K	
CMS/FS	\$13K	
SI	\$4K	
Support	\$4K	
RAB	\$10K	\$674.4K

FY 99

CMI/RA	\$1,275K	
CMI/RD	\$73K	
LTM	\$45K	
CMS/FS	\$439K	
Support	\$7K	\$1,839K

FY 00

RI/FS	\$54K	
RA	\$103K	
RD	\$86.068K	
LTM	\$43.444K	\$286.512K

FY 01

RI/FS	\$1,041K	
IRA	\$996K	
RA	\$15K	
RD	\$31K	
LTM	\$26K	\$2,109K

FY 02

RI/FS	\$1,930K	
IRA	\$110K	
RA	\$75K	
RD	\$44K	
LTM	\$15K	\$2,174K

FY03

RI/FS	\$772K	
IRA	\$492K	
RA	\$323K	
RD	\$145K	
LTM	\$52K	\$1,784K

Cost

PRIOR YEAR FUNDING

FY04

RI/FS	\$610K	
IRA	\$467K	
RA	\$14K	
RD	\$4K	\$1,095K

TOTAL PRIOR YEAR

\$13,256,912

CURRENT YEAR FUNDING

FY05	\$693.441K
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FUTURE YEAR FUNDING

TOTAL FUTURE REQUIREMENTS: \$4,647,000

TOTAL IRP PROGRAM COSTS: \$18,597,353

Community Involvement

MCAAP does not have a RAB or a Technical Review Committee. The plant has surveyed the surrounding community on several occasions and has determined there is currently no community interest in forming a RAB.

The latest public canvassing was accomplished in February 2005 through a mailing to potentially interested community residents, which included a public meeting. One interested party attended the meeting. There was not sufficient interest to develop the RAB.

McAlester's Community Relations Plan will be updated in 2005.

MCALESTER AAP MILITARY MUNITIONS RESPONSE PROGRAM

MMRP Summary

STATUS: None of MCAAP sites are on the National Priorities List

AEDB-R SITES/SITES RC: 5/0

AEDB-R SITE TYPES:

3 Surface Disposal Area 1 Burn Area 1 Firing Range

CONTAMINANTS OF CONCERN: UXO

MEDIA OF CONCERN: Soil

COMPLETED REM/IRA/RA: None

TOTAL MMRP FUNDING:

PRIOR YEAR:	\$310,000
CURRENT FY05:	\$16,000
FUTURE:	\$12,095,000

DURATION OF IRP:

Year of MMRP Inception:	2003
Year of RIP/RC Completion:	2014
Year of MMRP Completion:	2047

MMRP Contamination Assessment

The Department of Defense established the Military Munitions Response Program (MMRP) under the Defense Environmental Restoration Program to identify and address sites known or suspected to contain unexploded ordnance (UXO), discarded military munitions or munitions constituents. The program concluded that response actions would be conducted under the process outlined in the National Contingency Plan as authorized by CERCLA.

The MMRP started with a baseline inventory that included a three-phase approach resulting in a Closed Transferring and Transferred (CTT) Range/Site Inventory Report. The initial phase involved a data call requesting general information about ranges located at MCAAP. This initial phase indicated one munitions response (MR) site.

Phase two involved a survey and inventory of all operation ranges. The intent of the inventory was to collect detailed, site-specific information, which delineated among other things, the operation range boundaries. The phase two inventory for MCAAP was conducted on 8 August 2001 and concluded that 39.31 acres of MCAAP is considered non-operation.

The third phase was a comprehensive inventory of non-operational ranges and other sites with known or suspected UXO, discarded military munitions, or munitions constituents. After the phase three inventory, five MR sites were identified at MCAAP.

Following CERCLA guidance, completion of the CTT Range/Site Inventory Report satisfies the preliminary assessment (PA) phase. A site inspection (SI) phase began in 2004 to collect information for refining the MMRP CTC estimates and determine if a remedial investigation will be required. A Historic Records Review, the initial step of the SI phase, was completed in March 2005 and recommended further characterization at all five sites. Fieldwork was conducted in FY05 to address data gaps that were identified during the records review and continue the site characterization.

CLEANUP EXIT STRATEGY:

It is anticipated that all five sites will require additional investigation and future remedial actions with additional LTM being required.

PREVIOUS STUDIES:

2000

- U. S. Army Advance Range Survey for McAlester Army Ammunition Plant, McAlester AAP, Nov-00.

2001

- U. S. Army Active/Inactive (A/I) Range Inventory for McAlester Army Ammunition Plant, USAEC, Dec-01.

Previous Studies on next page

MMRP Contamination Assessment

2003

- U. S. Army Closed, Transferring & Transferred Range/Site Inventory for McAlester Army Ammunition Plant, Engineering-Environmental Management, Inc., Apr-03.

2004

- Stakeholder of the Military Munitions Response Program Historical Records Review, McAlester Army Ammunition Plant, McAlester, Oklahoma, Engineering-Environmental Management, Inc., Dec-04.

MCALESTER AAP

**MILITARY MUNITIONS RESPONSE
PROGRAM**

SITE DESCRIPTIONS

MCAAP-001-R-01

SCRAP METAL DISPOSAL AREA

SITE DESCRIPTION

This 10.27-acre site is located approximately one mile north of the Major Caliber area in the northeast portion of the installation. This site was a scrap metal disposal area from 1960 to 1970 for refuse including cans, buckets, drums, ZUNI rocket bodies, incinerator refuse and electrical refuse.

As part of the IRP, this site is identified as MCAAP-005 and no further action was approved by the Oklahoma Department of Environmental Quality due to the absence of human health risk and low ecological impact. No UXO responses have been conducted at this site. Currently, ZUNI rocket bodies are located all over the surface of this area and the site remains undeveloped.

CLEANUP STRATEGY

Additional investigation and waste removal is planned.

STATUS

RAC Score: 2

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200212	200305
SI	200404	200511
RI/FS	200810	201009
RD	201210	201304
RA	201305	201404
LTM	201710	204709

RC: 201404

MCAAP-002-R-01

WOOD SCRAP YARD

SITE DESCRIPTION

This 4.97-acre site is located northeast of the intersection of Road 4 and F and was used from 1970 to 1980. An old burn area used to burn waste munitions was located at this site and is now covered by scrap wood and lumber being stored for reuse. A June 1977 report states that TNT, ammonia picrate, and smokeless powder were burned at this site.

As part of the IRP, this site is identified as MCAAP-008 and no further action was approved by the Oklahoma Department of Environmental Quality due to low exposure potential and no documented evidence of a release. No UXO responses have been conducted at this site. Currently, this site is used to store scrap wood and lumber for future reuse at the installation.

CLEANUP STRATEGY

Additional investigation and soil removal is planned.

STATUS

RAC Score: 4

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200212	200305
SI	200404	200511
RI/FS	200810	201009
RD	201210	201304
RA	201305	201404
LTM	201710	204709

RC: 201404

MCAAP-003-R-01

ABANDONED LANDFILL

SITE DESCRIPTION

This 3.15-acre site is located south of the Group 71-BT area and southwest of the 90 degree bend in Road F. This landfill was active between 1950 and 1970 and received unknown waste along with rocket bodies, metal boxes, wire and concrete rubble.

As part of the IRP, this site is identified as MCAAP-010 and no further action was approved by the Oklahoma Department of Environmental Quality. No UXO responses have been conducted at this site. Currently, ZUNI rocket bodies are located all over the surface of this area and the site remains undeveloped.

CLEANUP STRATEGY

Additional investigation and soil removal is planned.

STATUS

RAC Score: 2

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200212	200305
SI	200404	200511
RI/FS	200810	201009
RD	201210	201304
RA	201305	201404
LTM	201710	204709

RC: 201404

MCAAP-004-R-01**GROUP 41 LC LAGOON & LANDFILL AREA****SITE DESCRIPTION**

This 10.27-acre site is located south of the 41 LC Bunker Area in the north central part of the installation between two lagoons. This area was used from 1945 to 1960 as a dump area for miscellaneous items including significant amounts of mortar casings.

As part of the IRP, this site is identified as MCAAP-012 and was sampled for contaminants. Under the IRP, no further action was approved by the Oklahoma Department of Environmental Quality due to the absence of a human health risk and low ecological impact. No UXO responses have been conducted at this site. Currently, mortar casings are located all over the surface of this area and the site remains undeveloped.

CLEANUP STRATEGY

Additional investigation and soil removal is planned.

STATUS

RAC Score: 2

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200212	200305
SI	200404	200511
RI/FS	200810	201009
RD	201210	201304
RA	201305	201404
LTM	201710	204709

RC: 201404

MCAAP-005-R-01

MORTAR RANGE IMPACT AREA

SITE DESCRIPTION

This former range impact area is located on the north and south sides of Brown Lake and was used from 1962 through 1977. The US Marines used this area during firepower shows. Mortars of various sizes, and machine gun and tracer rounds were fired across Brown Lake into the impact area. The firing point was located on a peninsula on the north side of Brown Lake, while the impact area was located on the south side of the lake. No UXO responses or clean up has been conducted at this site. This 10.65-acre area is currently undeveloped.

CLEANUP STRATEGY

Additional investigation and waste removal is planned.

STATUS

RAC Score: 2

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200212	200305
SI	200404	200511
RI/FS	200810	201009
RD	201210	201304
RA(C)	201305	201404
LTM	201710	204709

RC: 201404

Schedule

PAST MILESTONES

MMRP Start Date	2002
Completion of Historic Record Review	2005

PROJECTED MILESTONES

Completion of the SI	2006
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ROD/DD Approval Dates: 2010

Construction Completion: 2014

Completion Date of all RA(C) Activities: 2014

Completion Date of IRP (including LTM phase): 2047

McAlester AAP MMRP Schedule

*EM-PLAN-04

(Based on current funding constraints)

CURRENT PHASE

FUTURE PHASE

AEDB-R#	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
MCAAP-001-R-01	RI/FS										
	RD										
	RAC										
	LTM										204709
MCAAP-002-R-01	RI/FS										
	RD										
	RAC										
	LTM										204709
MCAAP-003-R-01	RI/FS										
	RD										
	RAC										
	LTM										204709
MCAAP-004-R-01	RI/FS										
	RD										
	RAC										
	LTM										204709
MCAAP-005-R-01	RIFS										
	RD										
	RAC										
	LTM										204709

Cost

PRIOR YEAR FUNDING

FY04	SI at MCAAP-001-R-01	\$62K	
	SI at MCAAP-002-R-01	\$62K	
	SI at MCAAP-003-R-01	\$62K	
	SI at MCAAP-004-R-01	\$62K	
	SI at MCAAP-005-R-01	\$62K	\$310K

CURRENT YEAR FUNDING

FY05	Installation-wide SI	\$16K	\$16K
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FUTURE YEAR FUNDING

TOTAL FUTURE REQUIREMENTS: \$12,095,000

TOTAL MMRP PROGRAM COSTS: \$12,421,000